



European Aviation Safety Agency

## SUPPLEMENTAL TYPE CERTIFICATE

**10043360**

This Supplemental Type Certificate is issued by EASA, acting in accordance with Regulation (EC) No. 216/2008 on behalf of the European Community, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation and in accordance with Commission Regulation (EU) No. 748/2012 to

### **AERO DESIGN LTD.**

**2013 39TH AVENUE NE  
CALGARY AB T2E 6R7  
CANADA**

and certifies that the change in the type design for the product listed below with the limitations and conditions specified meets the applicable Type Certification Basis and environmental protection requirements when operated within the conditions and limitations specified below:

**Original Type Certificate Number : EASA.IM.R.506**

**Type Certificate Holder : BELL HELICOPTER TEXTRON CANADA**

**Type Design - Model : 429**

**Original STC Number : TCCA STC SH12-58**

#### **Description of Design Change:**

**INSTALLATION OF EXTERNAL ATTACHMENT PROVISIONS, CARGO BASKET, AND CABIN STEPS.**

Configuration A - External Attachment Provisions described in AERO Design Ltd. Document Control List, DCL959-2, Revision 0, dated 28 September 2012, or later approved revision.

Configuration B - External Cargo Basket Installation.

Installation of Quick Release Cargo Basket to be completed in accordance with AERO Design Ltd. Document Control List, DCL959-1, Revision 0, dated 28 September 2012, or later approved revision.

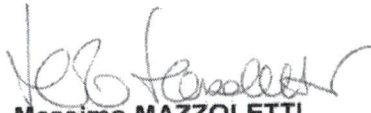
Configuration C - Cabin Steps.

Installation of Cabin Steps to be completed in accordance with AERO Design Ltd. Document Control List, DCL969-1, Revision 0, dated 12 December 2012, or later approved revision.

See Continuation Sheet(s)

**For the European Aviation Safety Agency,**

**Date of issue: 23 January 2013**

  
**Massimo MAZZOLETTI**  
**Certification Manager**  
**Rotorcraft, Balloons, Airships**

**Note:**

The following numbers are listed on the certificate:  
EASA current Project Number: 0010020992-001

SUPPLEMENTAL TYPE CERTIFICATE - 10043360 - AERO DESIGN LTD.

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## European Aviation Safety Agency

### EASA Certification Basis:

The Certification Basis for the original product remains applicable to this certificate/ approval.  
The requirements for environmental protection and the associated certified noise and/ or emissions levels of the original product are unchanged and remain applicable to this certificate/ approval.

### Associated Technical Documentation:

AERO Design Ltd. Flight Manual Supplement FMS969.90, Revision 0, dated <sup>03</sup>12 December 2012  
AERO Design Ltd. Instruction for Continued Airworthiness ICA 969.91, dated 03 December 2012 <sup>30 NOV 2012</sup>  
AERO Design Ltd. Document Control List, DCL959-2, Revision 0, dated 28 September 2012 ✓  
AERO Design Ltd. Document Control List, DCL959-1, Revision 0, dated 28 September 2012 ✓  
AERO Design Ltd. Document Control List, DCL969-1, Revision 0, dated 12 December 2012 ✓  
or later revisions of the above listed documents approved by EASA in accordance with the Technical Implementation Procedures of EU/ Canada Bilateral Agreement.

### Limitations/Conditions:

External Attachment Provisions installed in accordance with DCL959-2 may remain installed in accordance with DCL959-2 if the basket installation is removed.  
Installation of Configuration A, External Attachment Provisions, is a prerequisite for installation of Configuration B, External Cargo Basket Installation.  
This installation is not compatible with floats installation.

Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the modified product.

Prior to installation of this design change it must be determined that the interrelationship between this design change and any other previously installed design change and/ or repair will introduce no adverse effect upon the airworthiness of the product.

This Supplemental Type Certificate is approved only for the product configuration as defined in the approved design data referred to in the paragraph "Description".

The installation of this modification by third persons is subject to written permission of the approval holder.

- end -

#### Note:

The following numbers are listed on the certificate:  
EASA current Project Number: 0010020992-001

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## BELL 429

### ROTORCRAFT FLIGHT MANUAL SUPPLEMENT for the INSTALLATION of the AERO DESIGN QUICK RELEASE CABIN STEP

Canadian Supplemental Type Certificate No. SH12-58  
FAA Supplemental Type Certificate No. XX  
EASA Supplemental Type Certificate No. XX

Sections I, II, III and IV of this document comprise the Transport Canada Approved sections of this Flight Manual Supplement. Compliance with Section I, Limitations, is mandatory.

Section V and any subsequent sections if present are Unapproved and are provided for information only.

The information and data contained in this Flight Manual Supplement supersede or supplement that contained in the basic Approved Flight Manual for the Bell 429 when fitted with the Quick Release Cabin Step Installation. For limitations, procedures and performance not listed in this Flight Manual Supplement, refer to the Approved Flight Manual and other approved Flight Manual Supplements.



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### Record of Revisions

Revision	Issue Date	Pages Revised	Date Inserted	By
0	03 Dec 2012	None		



## **I LIMITATIONS**

No change from basic Approved Flight Manual.

## **II NORMAL PROCEDURES**

1. Pre-flight inspections:

- a) Ensure the step is locked in position on the beams. Pull up on the aft end of the step to check.

## **III EMERGENCY PROCEDURES**

No change from basic Approved Flight Manual.

## **IV PERFORMANCE**

No change from basic Approved Flight Manual.

**DEC 19 2012**

## V WEIGHT AND BALANCE

- The following weight and balance is for the quick release cabin step configuration, installed in accordance with drawing 96902.

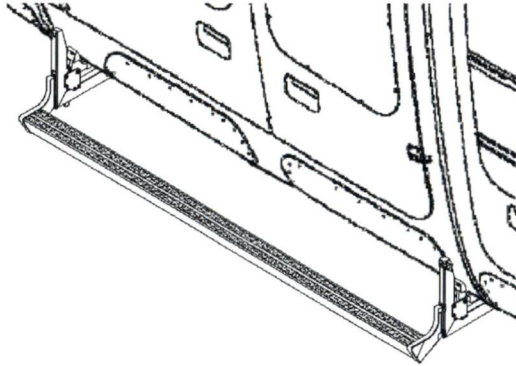


Figure V.1 – Quick Release Cabin Step (95902-01 Configuration)

96902-01-XX Quick Release Cabin Step Configuration

Item	Weight	Longitudinal		Lateral	
		Arm	Moment	Arm	Moment
Step Only <sup>1</sup>	6.0 lb	201.25 in	1207.50 in*lb	+/-35.76 in	+/-214.56 in*lb
	2.7 kg	5112 mm	13912 mm*kg	+/-908 mm	+/-2472 mm*kg

96902-11-XX Quick Release Cabin Step Configuration (Alternate)

Item	Weight	Longitudinal		Lateral	
		Arm	Moment	Arm	Moment
Step Only <sup>1</sup>	8.2 lb	201.25 in	1650.25 in*lb	+/-33.67 in	+/-251.33 in*lb
	3.7 kg	5112 mm	19013 mm*kg	+/-855 mm	+/-2896 mm*kg

<sup>1</sup> Weight and balance is for Quick Release Cabin Step only. Mounting beams and attachment provisions are not included since they are included in the basic rotorcraft weight and balance at time of initial installation.



## VI INSTALLATION / REMOVAL INSTRUCTIONS

The Quick Release Mounting Provisions are installed in accordance with drawing 95902. The Quick Release Cabin Step is installed in accordance with drawing 96902. Removal of the step leaving the beams in place is an approved configuration for flight. Logbook entry indicating installation or removal of step and which weight and balance amendment is in effect is required.

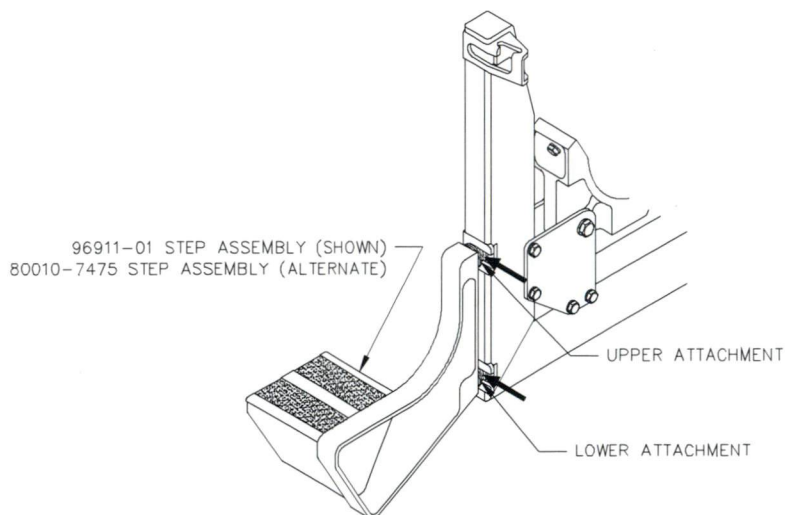


Figure VI.1 – Forward Step Attachment

1. Step Installation - Refer to Figure VI.1 and VI.2.
  1. Slide forward attachments of Quick Release Step Assembly 96911-01 (or 80010-7475, alternate configuration) into forward mounting beam.
  2. At aft end, rotate step inboard and pull step aft to aft mounting beam. Align attachment fittings on step with keyways, push step in and down to engage attachments into keyways on aft beam. Pin at lower attachment will spring into place with a snap.
  3. Check that step is secure by pulling up on aft end.

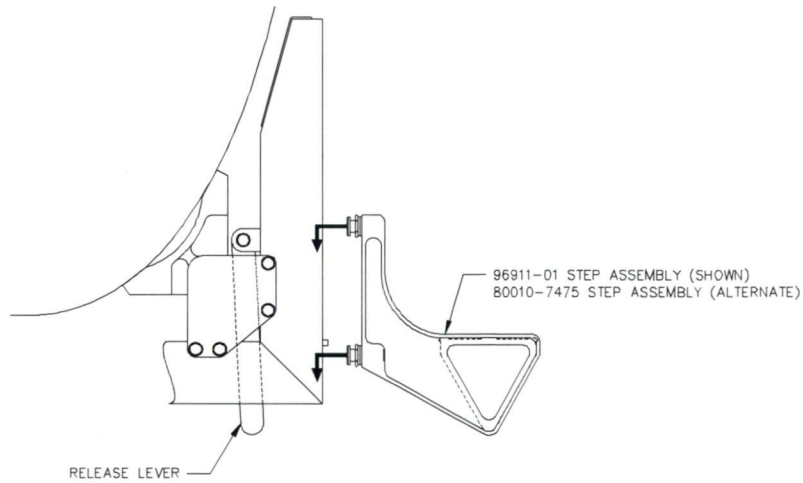


Figure VI.2 – Aft Step Attachment

2. Step Removal - Refer to Figure VI.1 and VI.2.

1. Pull lever at bottom end of aft beam inboard to retract retaining pin and lift step until lower attachment fitting is free of keyway. Keep upper attachment in slot in beam.
2. Lift step until upper attachment is out of keyway on aft beam. Slide step forward and rotate aft end outboard until forward attachments are free from keyways in forward beam.



## **INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA 969.91**

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### **BELL 429**

### **CABIN STEPS**

#### **Preface**

These Instructions for Continued Airworthiness shall be included in the rotorcraft Maintenance Manual when Cabin Steps are installed in accordance with the following AERO Design Ltd. Document Control Lists:

- DCL969-1 (Fixed Cabin Step Installation)
- DCL969-2 (Quick Release Cabin Step Installation)

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 0  
Date: 30 November 2012

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**AERO Design Ltd.**  
Engineering Consultants

2013 – 39<sup>th</sup> Avenue N.E., Calgary, Alberta T2E 6R7  
Phone: (403) 250-8027  
Fax: (403) 250-8333  
E-Mail: [info@aerodesign.ca](mailto:info@aerodesign.ca)

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**RECORD OF REVISIONS**

Revision Number	Issue Date	Date Inserted	By
0	30 November 2012		Original Issue

**LIST OF EFFECTIVE PAGES**

List of Revisions                      Revision 0 (Original Issue)    30 November 2012

## List of Effective Pages

<u>Description</u>	<u>Pages</u>	<u>Revision No.</u>
Cover	1	0
Revision Record/List of Effective Pages	2	0
Table of Contents	3	0
00-00-00	4-5	0
04-00-00	6	0
05-00-00	7-8	0
32-00-00	9-14	0



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## CHAPTER 0 – INTRODUCTION

### 0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of CAR 527.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Cabin Step Installations as described herein.

### 0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness

LH - Left Hand

RH - Right Hand

### 0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Cabin Step Installation. Requests for a copy may be made in writing to:

AERO Design Ltd.  
2013 39<sup>th</sup> Avenue N.E.  
Calgary, Alberta  
T2E 6R7  
Fax: 403-250-8333  
Email: [info@aerodesign.ca](mailto:info@aerodesign.ca)

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

### 0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

The Quick Release Cabin Step is installed on the existing mounting provisions for the Cargo Basket Installation. The Quick Release step cannot be installed simultaneously with the Cargo Basket or vice versa.

## 0-5 GENERAL DESCRIPTION

Installation of the Cargo Basket mounting provisions requires removal of the existing Bell cabin step assembly. This leaves the helicopter with no cabin access steps. The cabin step installations covered by these instructions use the cargo basket mounting provisions to provide for cabin access steps on both sides of the helicopter. The Fixed Cabin Step installation consists of a step assembly that is installed on the opposite side of the helicopter that the basket is installed on. The Quick Release Cabin Step installation is installed in place of the cargo basket when it is not required, and uses the cargo basket locking mechanism to retain it in the mounting provisions.

The step itself consists of an aluminum extrusion welded to machined aluminum brackets. Strips of non-slip tape are adhered to the top of the step.

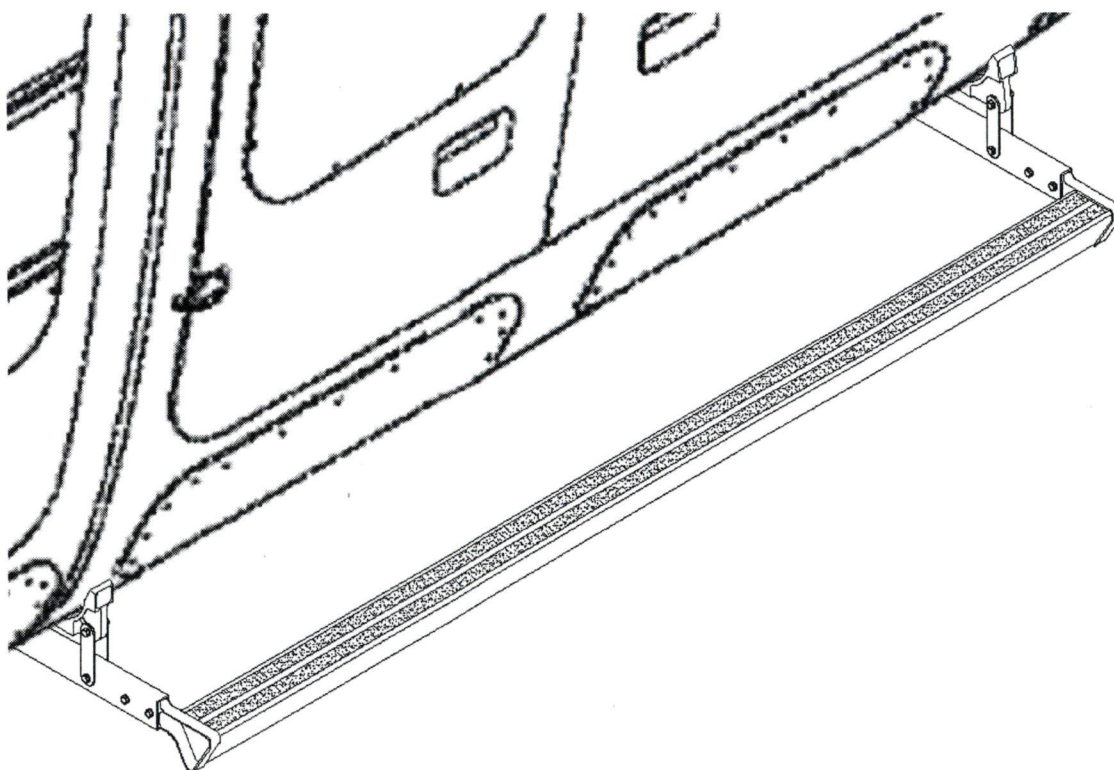


Figure 0-1 – Fixed Cabin Step

## **CHAPTER 4 - AIRWORTHINESS LIMITATIONS**

### *Transport Canada*

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

### *FAA*

The Airworthiness Limitations section is FAA approved and specifies inspections and other maintenance required under Secs. 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

### *EASA*

The Airworthiness Limitations section is approved and variations must also be approved.

No additional airworthiness limitations have been imposed due the installation of the Cabin Steps.



## CHAPTER 5 – INSPECTION REQUIREMENTS

### 5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of the Cabin Step Installations. Refer to ICA959.91 for inspection requirements for the Cargo Basket Mounting Provisions.

#### *Daily Inspection*

1. Inspection Area: Step
  - a) Inspect the step assembly for security and condition. Replace anti-slip tape if required, see Section 5-3.
  - b) Quick Release Step only: Visually inspect the attachment fittings for condition and security. Ensure quick release mechanism is completely extended, flush with the outboard surface of the beam. If pin does not completely extend, or spring tension is not sufficient to retain step, replace spring, refer to ICA959.91, section 25-10.

#### *200 Hour or Annual Inspection*

1. Inspection Area: Step
  - a) Perform daily inspection.
  - b) Visually inspect all mounting hardware for condition and security.
  - c) Visually inspect step and mounting brackets for corrosion, cracks or other damage. Repair damage found in accordance with section 5-2.

#### *Special Inspections*

1. Following a hard landing inspect the Fixed Cabin Step installation in accordance with the 200 hour or annual inspection listed above.

## 5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

If damage is found in the inspections above, repair in accordance with the instructions below.

### 1. Step Assembly – Fixed and Quick Release

Part	Type of Damage	Max. Allowable	Repair
Brackets	Corrosion	0.010" deep (0.25 mm deep)	Blend up to 0.010" (0.25 mm) deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 0.5" long (0.25 mm deep x 13 mm long)	Blend up to 0.010" (0.25 mm) deep with scotchbrite.
	Cracks/Dents	None	N/A
	Bent Lugs	None	N/A
Step Section	Corrosion	2" x 2" x 0.010" deep (51 mm x 51 mm x 0.25 mm deep)	Blend up to 0.010" (0.25 mm) deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 1" long (0.25 mm deep x 25 mm long)	Blend up to 0.010" (0.25 mm) deep with scotchbrite.
	Cracks / Dents	None	N/A
	Permanent Deflection of Step	0.25" (6 mm) max at middle of step	None
Welds	Cracks	0.25" (6 mm) max	See 2. below

### 2. Weld repair

Cracks up to 0.25" (6mm) in length may be repaired as follows:

- Clean area of paint or powder coat (as applicable).
- Grind away weld in area of crack.
- TIG weld in accordance with AMS2685C or equivalent, using ER4043 filler rod. Do not grind flush.
- Touch up paint in accordance with section 5-3

## 5-3 PROTECTIVE TREATMENT INFORMATION

### 1. Step Assembly

The Step Assembly is supplied powder coated white. If the powder coat is damaged, touch up in accordance with Bell Standard Procedures Manual, BHT-SPM-ALL, Chapter 4 and Chapter 5.

The tread areas have two strips of 3M Safety-Walk grip tape. If the grip tape is damaged replace with equivalent grip tape, or apply MIL-W-5044, Type 2, anti-slip paint to the top surface.

## CHAPTER 32 – LANDING GEAR

The Cabin Step installations may be applied to the right or left side of the helicopter, depending on the Mounting Provisions that are installed.

### 32-1 FIXED CABIN STEP REMOVAL

Configuration: 96901-01-01 (right), 96901-01-02 (left)

Refer to Figure 0-1 and 32-1.

1. Remove two (2) AN4-14A bolts, NAS1149F0463P washers, MS21044N4 nuts securing step bracket into forward and aft mounting beams. Slide Step Assembly 96910-01 out of mounting beams.

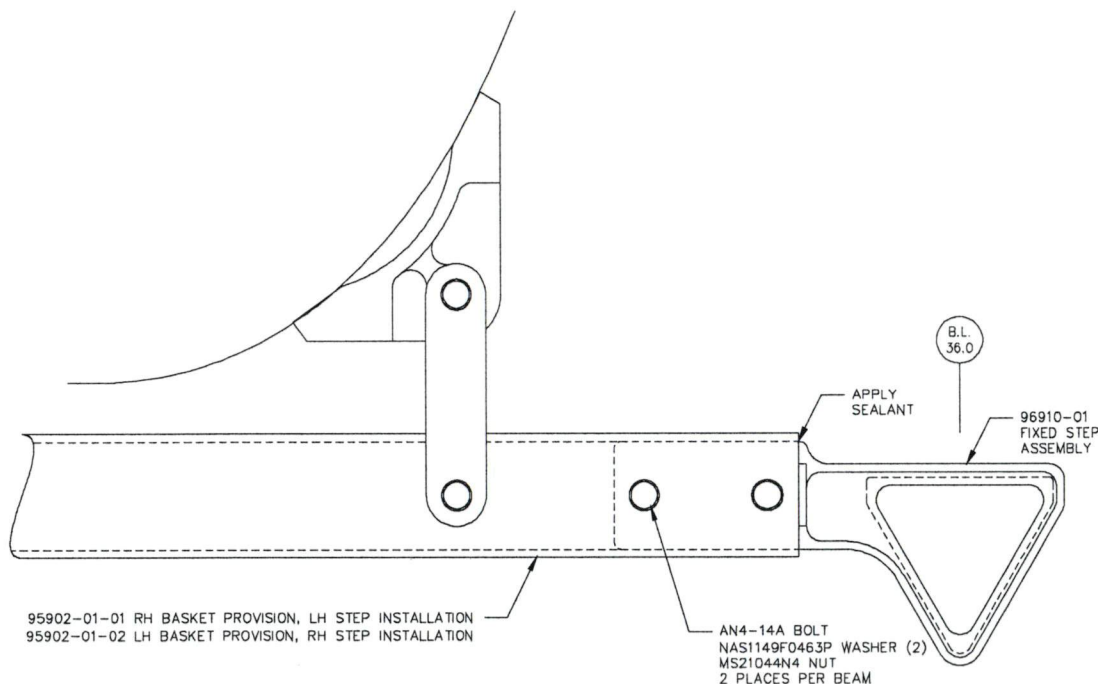


Figure 32-1 – Fixed Step Installation

### 32-2 FIXED CABIN STEP INSTALLATION

Configuration: 96901-01-01 (right), 96901-01-02 (left)

Refer to figure 0-1 and 32-1.

1. Attachment Provisions 95902-01-01 (right side basket) or 95902-01-02 (left side basket) must be installed. Refer to ICA959.91, section 25.
2. Clean inside of forward and aft mounting beam as required to remove any residual sealant or powder coat. A file or 80 grit emery paper may be used.
3. Apply sealant (C-251) to the faying surfaces of the mounting beam and Step Assembly 96910-01.
4. Insert brackets on Step Assembly 96910-01 into ends of forward and aft mounting beams. Slide until against stop on step bracket.



5. Insert two (2) AN4-14A Bolts, NAS1149F0463P Washers (2), and MS21044N4 Nuts into holes in forward mounting beam, through step bracket. Repeat for aft mounting beam.
6. Torque AN4 Bolts to 30-40 in-lbs (4-5 N-m).
7. Apply bead of sealant (C-251) at interface of step bracket and mounting beam.

### 32-3 QUICK RELEASE CABIN STEP REMOVAL

Configuration: 96902-01-01 (right), 96902-01-02 (left)

Alternate Configuration: 96902-11-01 (right), 96902-11-02 (left)

Refer to Figure 32-2 and 32-3.

1. Pull lever at bottom end of aft beam inboard to retract retaining pin and lift step until lower attachment fitting is free of keyway. Keep upper attachment in slot in beam.
2. Lift step until upper attachment is out of keyway on aft beam. Slide step forward and rotate aft end outboard until forward attachments are free from keyways in forward beam.

### 32-4 QUICK RELEASE CABIN STEP INSTALLATION

Configuration: 96902-01-01 (right), 96902-01-02 (left)

Alternate Configuration: 96902-11-01 (right), 96902-11-02 (left)

Refer to Figure 32-2 and 32-3.

1. Slide forward attachments of Quick Release Step Assembly 96911-01 (or 80010-7475, alternate configuration) into forward mounting beam.

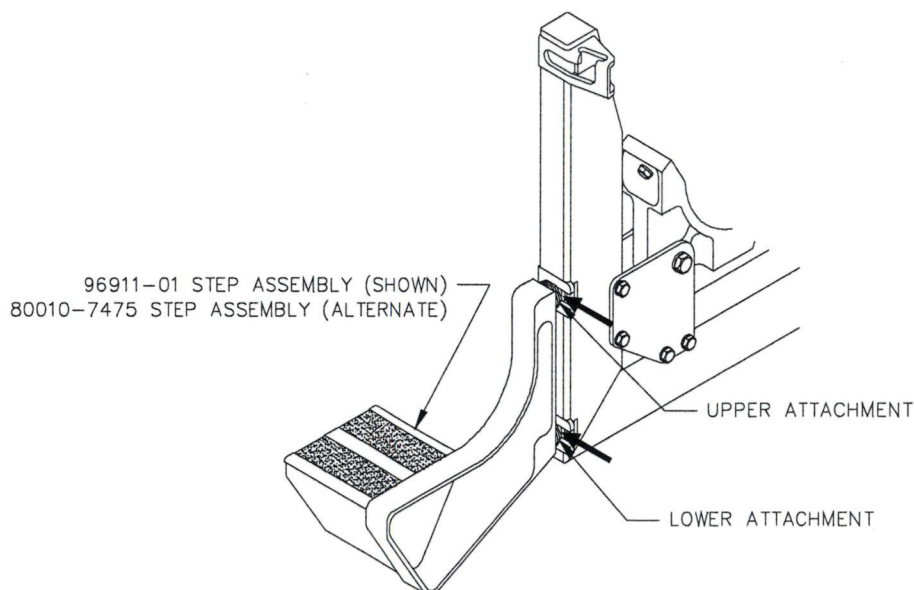


Figure 32-2 – Quick Release Step Forward Attachment

2. At aft end, rotate step inboard and pull step aft to aft mounting beam. Align attachment fittings on step with keyways, push step in and down to engage attachments into keyways on aft beam. Pin at lower attachment will spring into place with a snap.

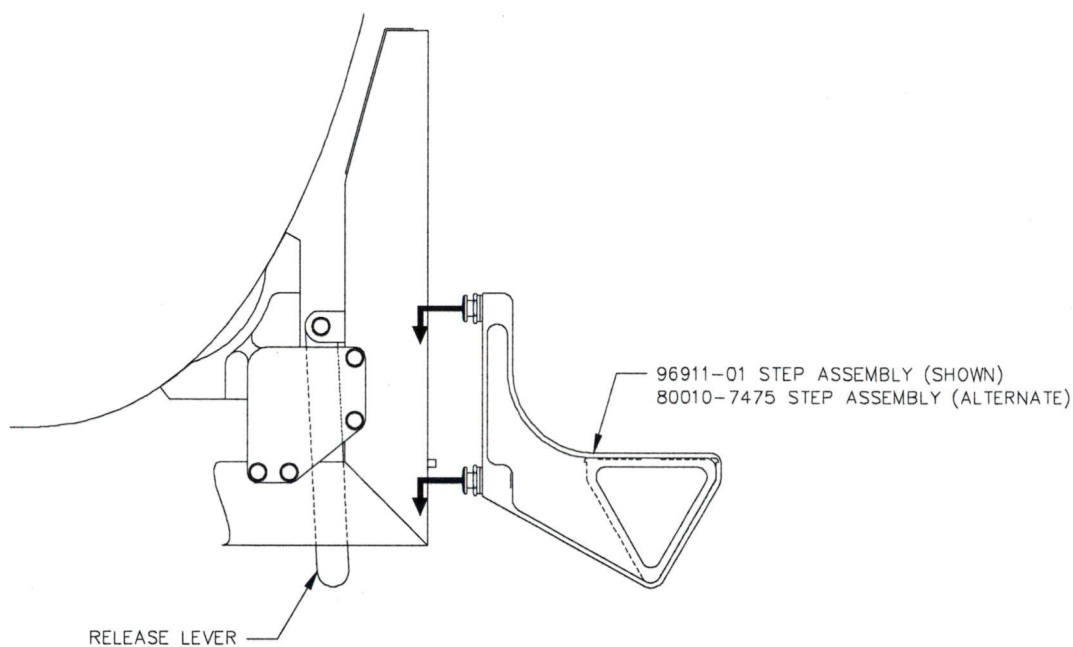


Figure 32-3 – Quick Release Step Aft Attachment

3. Check that step is secure by pulling up on aft end.



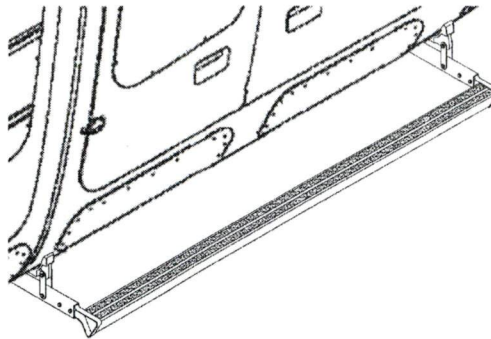
**32-5 BILL OF MATERIALS**

Figure 32-4 – Fixed Cabin Step Installation (Left shown)

**FIXED CABIN STEP INSTALLATION**

Qty.	Part Number	Description
	<b>96901-01-01</b>	<b>RH Fixed Cabin Step Installation</b>
	<b>96901-01-02</b>	<b>LH Fixed Cabin Step Installation</b>
. 1	95902-01-01	RH Attachment Provisions Installation
. 1	95902-01-02	LH Attachment Provisions Installation
. 1	96910-01	Fixed Step Assembly
. 4	AN4-42A	Bolt
. 8	AN960-416	Washer
. 4	MS21044N4	Nut

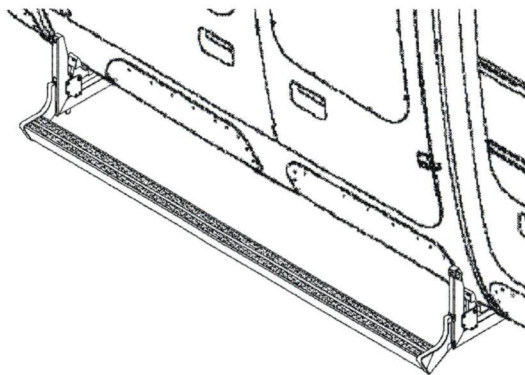


Figure 32-5 – Quick Release Step Installation (Right shown)

**QUICK RELEASE CABIN STEP INSTALLATION**

Qty.	Part Number	Description
	<b>96902-01-01</b>	<b>RH Fixed Cabin Step Installation</b>
	<b>96902-01-02</b>	<b>LH Fixed Cabin Step Installation</b>
. 1	95902-01-01	RH Attachment Provisions Installation
. 1	95902-01-02	LH Attachment Provisions Installation
. 1	96911-01	Quick Release Step Assembly
	<b>96902-11-01</b>	<b>RH Fixed Cabin Step Installation (Alternate)</b>
	<b>96902-11-02</b>	<b>LH Fixed Cabin Step Installation (Alternate)</b>
. 1	95902-01-01	RH Attachment Provisions Installation
. 1	95902-01-02	LH Attachment Provisions Installation
. 1	80010-7475	Quick Release Step Assembly

**32-6 WEIGHT AND BALANCE****Standard**

P/N	Description	Weight	Longitudinal		Lateral	
		lb	arm in	moment in-lb	arm in	moment in-lb
Fixed Step						
95902-01-02	LH Attachment Provisions Installation	31.2	201.47	6286.01	-2.91	-90.85
95910-01	Fixed Cabin Step Assembly	5.8	201.25	1167.25	35.70	207.06
95901-01-01	RH Fixed Cabin Step Installation (total)	37.0	201.44	7453.26	3.14	116.21
95902-01-01	RH Attachment Provisions Installation	31.2	201.47	6286.01	2.91	90.85
95910-01	Fixed Cabin Step Assembly	5.8	201.25	1167.25	-35.70	-207.06
95901-01-02	LH Fixed Cabin Step Installation (total)	37.0	201.44	7453.26	-3.14	-116.21
Quick Release Step						
95902-01-01	RH Attachment Provisions Installation	31.2	201.47	6286.01	2.91	90.85
95911-01	Quick Release Cabin Step Assembly	6.0	201.25	1207.50	35.76	214.56
95902-01-01	RH Quick Release Cabin Step Installation (total)	37.2	201.44	7493.51	8.21	305.41
95902-01-02	LH Attachment Provisions Installation	31.2	201.47	6286.01	-2.91	-90.85
95911-01	Quick Release Cabin Step Assembly	6.0	201.25	1207.50	-35.76	-214.56
95902-01-02	LH Quick Release Cabin Step Installation (total)	37.2	201.44	7493.51	-8.21	-305.41
Quick Release Step (Alternate)						
95902-01-01	RH Attachment Provisions Installation	31.2	201.47	6286.01	2.91	90.85
80010-7475	Quick Release Cabin Step Assembly	8.2	201.25	1650.25	33.67	276.09
95902-11-01	RH Quick Release Cabin Step Installation (Alternate) (total)	39.4	201.43	7936.26	9.31	366.95
95902-01-02	LH Attachment Provisions Installation	31.2	201.47	6286.01	-2.91	-90.85
80010-7475	Quick Release Cabin Step Assembly	8.2	201.25	1650.25	-33.67	-276.09
95902-11-02	LH Quick Release Cabin Step Installation (Alternate)(total)	39.4	201.43	7936.26	-9.31	-366.95

Metric						
P/N	Description	Weight	Longitudinal		Lateral	
		kg	arm mm	moment mm-kg	arm mm	moment mm-kg
Fixed Step						
95902-01-02	LH Attachment Provisions Installation	14.15	5117.46	72422.75	-73.96	-1046.73
95910-01	Fixed Cabin Step Assembly	2.63	5111.75	13448.19	906.78	2385.59
95901-01-01	RH Fixed Cabin Step Installation (total)	16.78	5116.56	85870.95	79.78	1338.86
95902-01-01	RH Attachment Provisions Installation	14.15	5117.46	72422.75	73.96	1046.73
95910-01	Fixed Cabin Step Assembly	2.63	5111.75	13448.19	-906.78	-2385.59
95901-01-02	LH Fixed Cabin Step Installation (total)	16.78	5116.56	85870.95	-79.78	-1338.86
Quick Release Step						
95902-01-01	RH Attachment Provisions Installation	14.15	5117.46	72422.75	73.96	1046.73
95911-01	Quick Release Cabin Step Assembly	2.72	5111.75	13911.92	908.30	2472.00
95902-01-01	RH Quick Release Cabin Step Installation (total)	16.87	5116.54	86334.68	208.53	3518.73
95902-01-02	LH Attachment Provisions Installation	14.15	5117.46	72422.75	-73.96	-1046.73
95911-01	Quick Release Cabin Step Assembly	2.72	5111.75	13911.92	-908.30	-2472.00
95902-01-02	LH Quick Release Cabin Step Installation (total)	16.87	5116.54	86334.68	-208.53	-3518.73
Quick Release Step (Alternate)						
95902-01-01	RH Attachment Provisions Installation	14.15	5117.46	72422.75	73.96	1046.73
80010-7475	Quick Release Cabin Step Assembly	3.72	5111.75	19012.96	855.22	3180.95
95902-11-01	RH Quick Release Cabin Step Installation (Alternate) (total)	17.87	5116.27	91435.71	236.56	4227.68
95902-01-02	LH Attachment Provisions Installation	14.15	5117.46	72422.75	-73.96	-1046.73
80010-7475	Quick Release Cabin Step Assembly	3.72	5111.75	19012.96	-855.22	-3180.95
95902-11-02	LH Quick Release Cabin Step Installation (Alternate)(total)	17.87	5116.27	91435.71	-236.56	-4227.68

### 32-7 STRUCTURAL FASTENER DATA

Refer to Standard Practices Manual, BHT-ALL-SPM, for torque values not listed in this ICA.



## Dubyk, Debbie

**From:** Dubyk, Debbie  
**Sent:** Thursday, December 20, 2012 11:35 AM  
**To:** Ted Burgoin  
**Cc:** Staal, Jack  
**Subject:** YOUR PROJECT 969; TC PROJECT C-12-1075 SH12-58 - ISSUE 2  
**Importance:** High

Hi Ted:

Please find attached advance scanned copies of the following documents pertaining to the above noted Approval.

1. Transmittal Letter to Holder dated December 19, 2012;
2. STC Cert SH12-58 – Issue 2;
3. DCL969-1, Rev. 0 – TCCA Approved 2012 December 19;
4. DCL969-11, Rev. 0 – TCCA Approved 2012 December 19;
5. FMS969.90, Rev. 0 – TCCA Approved 2012 December 19;
6. CP969 – TCCA and Aero Design Initialed; Complete;
7. MSI 53 – TCCA accepted; signed by Jack Staal and dated 19 December 2012.



LETTER  
C-12-1075.pdf



SH12-58 - Issue  
2.pdf



DCL969-1 TCCA  
APPROVED.pdf



DCL969-11 Rev 0  
TCCA APPROVED....



FMS969.90 TCCA  
APPROVED.pdf



CP969 -  
COMPLETE.pdf



MSI 53 C-12-1075  
TCCA ACCEPTED...

The original documents will be sent to you in the mail today. You have also been given delegate access to view all documents, including these attached, uploaded to this project thru the NDWL.

Thank you.

Debbie

Debbie Dubyk  
Operational Support Assistant / Assistante soutien opérationnel  
Engineering \ Ingénierie  
Prairie & Northern Region \ Région des Prairies et du Nord  
Edmonton Operations | Edmonton opérations  
Telephone / téléphone 780-495-7412  
Facsimile / télécopieur 780-495-7963 / TTY/ATS 613-990-4500  
E-mail / courrier électronique / [debbie.dubyk@tc.gc.ca](mailto:debbie.dubyk@tc.gc.ca)  
Transport Canada / Transports Canada - RAED  
1100 Canada Place / 1100 Place du Canada  
9700 - Jasper Avenue / 9700 - avenue Jasper  
Edmonton, Alberta T5J 4E6  
Government of Canada / Gouvernement du Canada  
To provide feedback to TCCA, use CAIRS.  
See: <http://www.tc.gc.ca/CivilAviation/ManagementServices/QA/cairs.htm>  
Pour tout commentaire à TCAC, utiliser CAIRS.  
Voir: <http://www.tc.gc.ca/AviationCivile/ServicesdeGestion/AQ/ssqac.htm>



Transport  
Canada

Transports  
Canada

1100-9700 Jasper Avenue  
Edmonton, Alberta T5J 4E6

December 19, 2012

Your file      Votre référence  
969

Our file      Notre référence  
C-12-1075  
SH12-58

Aero Design Ltd.  
2013 39th Avenue North East  
Calgary, Alberta  
Canada, T2E 6R7

**ATTENTION: EDWARD BURGOIN – DAR290M**

Dear Sirs:

**SUBJECT: REVISION TO SUPPLEMENTAL TYPE CERTIFICATE NO. SH12-58 – ISSUE 2  
DATED DECEMBER 19, 2012 INSTALLATION OF EXTERNAL ATTACHMENT  
PROVISIONS, CARGO BASKET, AND CABIN STEPS – BELL 429 ISSUED TO  
AERO DESIGN LTD.**

This Supplemental Type Certificate (STC) is issued in response to your application. Included with the STC are the documents bearing the original Transport Canada signatures.

The transfer of this SH12-58 in the name of another person requires the prior approval from the Minister in accordance with Canadian Aviation Regulations (CAR) 521.357.

To accomplish this modification, the requirements of CAR 561 apply if parts are manufactured.

Embodiment of this modification is considered to be a maintenance activity and the requirements of CAR 571.06(4) will apply.

An STC holder is required to report any service problem experienced with their product. Therefore, should you become aware of any defect, malfunction or failure resulting from the design change, it is your responsibility to submit a Service Difficulty Report to Transport Canada in accordance with CAR V, Division IX. Other obligations as a Design Approval Document Holder are contained in CAR 521, Division VIII.

Yours truly,

J. Staal  
Engineering Technologist, Engineering  
Civil Aviation  
Prairie and Northern Region  
Phone: 780-495-5227  
Facs: 780-495-7963

Encl.

**Canada**





Transport  
Canada

Transports  
Canada

1100-9700 Jasper Avenue  
Edmonton, Alberta  
T5J 4E6

Your file      Votre référence  
969

Our file      Notre référence

**C-12-1075**  
**5010-0402**

December 11, 2012

AERO Design Limited  
2013 - 39 Ave. NE  
Calgary, AB  
T2E 6R7

**ATTENTION:      EDWARD BURGOIN – DAR 290M**

Dear Sirs:

**SUBJECT:      Extension of DAR 290M Authority – Quick Release Cargo Basket/Step Installation  
Bell 429 – Approval Number SH12-58 – Issue 2**

This letter is in response to your December 3, 2012, request for extension of delegation to cover the subject design change. You are hereby authorized to make findings of compliance against CAR 527 for the following compliance paragraph as listed in Compliance Plan CP969:

527.251      Vibration

This is a one-time extension and is to be exercised for this approval only. Approval number SH12-58 - Issue 2 has been assigned for your use.

If you have any questions or wish to discuss this project further, please contact the project OPI, Jack Staal at Telephone 780-495-5227 of the Edmonton TCC.

Yours truly,

F.J.B. Wright  
Technical Team Lead, Engineering  
Civil Aviation  
Prairie and Northern Region  
Phone: 780-495-3856  
Facs: 780-495-7963

**Canada**

**MSI 53 – Review of Supplemental Instructions for Continued Airworthiness**

**APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT – CAR 527**

**BLOCK 1**

<b>Name of the applicant for the design change approval:</b>	<b>Aero Design Ltd.</b>
<b>Description of the design change:</b>	<b>Installation of Quick Release Cargo Baskets on Bell 429</b>
<b>Certification Basis of design change and revision date:</b>	<b>CAR 527, Change 527-9</b>
<b>CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:</b>	<b>Section 0-3 of Supplemental ICA (ICA 969.91)</b>
<b>CAR Standard 513.05 (1) (g) (iv): Installation Instructions:</b>	<b>Installation Drawing 96901, 96902</b>

**BLOCK 2**

Note: Enter "N/A" when no supplemental ICA are needed.

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
<b>A527.2 (a) Manual(s)</b> (a) The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.	ICA ref: Bell 429 Maintenance Manual, BHT-429-MM	Supplemental ICA ref: Single Manual (ICA969.91)
<b>A527.2 (b) Practical arrangement</b> (b) The format of the manual or manuals must provide for a practical arrangement.	ICA ref: Bell 429 Maintenance Manuals	Supplemental ICA ref: Arranged in ATA format
<b>A527.3</b> The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
<b>A527.3 (a) Rotorcraft maintenance manual or section</b>		
<b>A527.3 (a) (1) (Introduction)</b> (1) Introduction information that includes an explanation of the rotorcraft's features and data to the extent necessary for maintenance or preventive maintenance.	ICA ref: Bell 429 Maintenance Manual, Chapter 1	Supplemental ICA ref: Section 0-1
<b>A527.3 (a) (2) (Description)</b> (2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances.	ICA ref: Bell 429 Maintenance Manual, Chapter 1	Supplemental ICA ref: Section 0-5

# MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
<b>A527.3 (a) (3) Control &amp; Operation</b> (3) Basic control and operation information describing how the rotorcraft components and systems are controlled and how they operate, including any special procedures and limitations that apply.	ICA ref: N/A	Supplemental ICA ref: N/A
<b>A527.3 (a) (4) Servicing</b> (4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and levelling information.	ICA ref: Bell 429 Maintenance Manual, Chapter 12	Supplemental ICA ref: N/A
<b>A527.3</b> The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
<b>A527.3 (b) Maintenance Instructions.</b> <b>A527.3 (b) (1) Scheduling</b> 1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross-references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft.	ICA ref: Bell 429 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
<b>A527.3 (b) (2) Troubleshooting</b> (2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions.	ICA ref: N/A	Supplemental ICA ref: N/A



# MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
<b>A527.3 (b) (3) Removal/replacement</b> (3) Information describing the order and method of removing and replacing products and parts with any necessary precautions to be taken.	ICA ref: Bell 429 Maintenance Manual, Chapter 25	Supplemental ICA ref: Section 32-1 thru 32-4
<b>A527.3 (b) (4) General</b> (4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations.	ICA ref: Bell 429 Maintenance Manual, Chapter 7 and 8	Supplemental ICA ref: Section 32-6
<b>A527.3 (c) Access</b> (c) Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	ICA ref: N/A	Supplemental ICA ref: N/A
<b>A527.3 (d) Special inspections</b> (d) Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified.	ICA ref: Bell 429 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
<b>A527.3 (e) Protective treatment</b> (e) Information needed to apply protective treatments to the structure after inspection.	ICA ref: Bell Standard Practices Manual BHT-ALL-SPM, Chapter 3	Supplemental ICA ref: Section 5-3
<b>A527.3 (f) Fasteners, torque values, etc</b> (f) All data relative to structural fasteners such as identification, discard recommendations, and torque values.	ICA ref: Bell Standard Practices Manual BHT-ALL-SPM, Chapter 2	Supplemental ICA ref: Section 32-7
<b>A527.3 (g) Special tools</b> (g) A list of special tools needed.	ICA ref: N/A	Supplemental ICA ref: N/A

## MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

### BLOCK 3

Note: The statement in block 5 does not constitute an approval of the Airworthiness Limitations Section. Airworthiness Limitations differ from other maintenance tasks, in that they are mandatory, as a direct condition of the approval of the type design. They are therefore referenced directly in the approval document itself. However, they must also be included in the Supplemental Instructions for Continued Airworthiness.

#### A527.4 AWL - Separate Section 1

The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under 527.571. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister."

ICA ref: Bell 429 Maintenance Manual,  
Chapter 4

Supplemental ICA ref: Chapter 4

### BLOCK 4 – Applicant Statement of Compliance

The Supplemental ICA referenced above comprises the complete listing of supplemental ICA necessary to show compliance with the regulatory standard that supports this change in type design.

Applicants Signature: \_\_\_\_\_

Date: 03 December, 2012

Applicants Name: E. Burgoin, P.Eng, DAR 290M

### BLOCK 5 – Minister's Statement of Acceptability

The design change is adequately supported by existing ICA and/or supplemental ICA, as identified above and is acceptable to the Minister.

Reviewer's Name: J. STAAL

Phone #

780-495-5227

Email: jack.staal@tc.gc.ca

Mail Routing Symbol: RAX1

Signature: J. Staal

Date:

19 Dec 2012

NAPA Number

C-12-1075



# AIRWORTHINESS REQUIREMENTS COMPLIANCE PROGRAM

APPLICANT: AERO Design Ltd.  
2013 39<sup>th</sup> Avenue NE  
Calgary, Alberta, T2E 6R7

DATE: 03 December 2012  
REV. No. 0

CORRESPONDANCE TO:  
(If other than applicant)

MAKE: Bell  
MODEL: 429

REGISTRATION: All Applicable  
SERIAL No.: All Applicable

NATURE OF WORK: Installation of Quick Release Cabin Step, Fixed Cabin Step

MODEL CERTIFICATION BASIS: CAR 527, Change 527-9  
MODIFICATION CERTIFICATION BASIS: CAR 527, Change 527-9

Airworthiness Requirement	Subject for Compliance or Documentary Proof	Form of Substantiation	DOT	DAR	Comments
<b>Subpart B – Flight</b>					
527.29	Empty Weight and Corresponding C of G Vibration	Data specified on inst'n drawing Statement in Report		X	
527.251				**	
<b>Subpart C – Strength Requirements</b>					
527.301	Loads – Air Drag/Lift Loads	Analysis		X	
527.301	Loads – Inertia Loads	Compliance with 527.337 and 527.561		X	
527.303	Factor of Safety	Analysis		X	
527.305	Strength and Deformation	Analysis and Test iaw AC 43.13-1B		X	
527.307	Proof of Structure	Analysis and Test iaw AC 43.13-1B		X	
527.337	Limit Maneuvering Load Factor – Positive	Analysis and Test iaw AC 43.13-1B		X	Step not intended for use in flight, no personnel loads, same as original configuration
527.561	Emergency Landing Conditions	N/A		X	Step is located below cabin
<b>Subpart D – Design and Construction</b>					
527.601	Design	Specification on Drawings		X	Design is conventional.
527.603	Materials	Specification on Drawings		X	Materials used are specified in AR-MMPDS-01.
527.605	Fabrication Methods	Specification on Drawings		X	Design is conventional.
527.609	Protection of Structure	Specification on Drawings		X	
527.611	Inspection Provisions	Specification on Drawings		X	Design is easy to inspect.
527.613	Material Strength Properties and Design Values	Values used as per AR-MMPDS-01		X	
527.625	Fitting Factor	Analysis		X	
527.1387	Position Light System Dihedral Angles	N/A			No change from Type Approval.
527.1401	Anticollision Light System	N/A			No change from Type Approval.

AIRWORTHINESS REQUIREMENTS  
COMPLIANCE PROGRAM

Airworthiness Requirement	Subject for Compliance or Documentary Proof	Form of Substantiation	DOT	DAR	Comments
527.1529	Instructions for Continued Airworthiness	ICA Provided	X	JP	
527.1581	Rotorcraft Flight Manual	FMS Provided	X	CP	Installation/Removal instructions provided

Items marked \*\* indicate chapters where extension of delegation is requested.

**Jeff Clarke**

---

**From:** Jeff Clarke [jeff@aerodesign.ca]

**Sent:** December 13, 2012 8:15 AM

**To:** 'Staal, Jack'

**Subject:** C-12-1075, 969, Steps addition, B429 basket STC SH12-58 going to issue 2

Jack,

Please find attached the draft STC for issue 2, DCLs and FMS for review and stamps, and initialled CP.  
The remainder of the documents are uploaded to NAPA.

Regards,

Jeff Clarke, CET

AERO Design Ltd.  
2013 39th Avenue NE  
Calgary, Alberta, Canada  
T2E 6R7

Phone: 403.250.8027

Fax: 403.250.8333

14/12/2012

## DECLARATION OF CONFORMITY WITH THE CERTIFICATION BASIS

In accordance with Canadian Aviation Regulations Subpart 521, I hereby declare that the design of the Cargo Basket and Cabin Step Installation, as detailed in the data approved by Transport Canada approval SH12-58, Issue 2, has been demonstrated to conform to the best of my knowledge to the basis of certification established by the Minister for that approval in file C-12-1075.

per:

Signature

E. Burgoin

Print Name

Consultant

Title

12 December 2012

Date

**A** In accordance with CAR 521 AERO Design Ltd. hereby  
*Company to hold the approval document(s):*  
undertake to carry out the responsibilities of a design approval document holder,  
as set out in Division VIII of Part V, Subpart 21 of the CARs, regarding:

1. Technical capability,
2. Service difficulty reporting,
3. Establishing a service difficult reporting system,
4. Investigation of service difficulty reports,
5. Mandatory changes,
6. Transfers,
7. Record keeping and loss or disposal of records,
8. Manuals,
9. Instructions for continued airworthiness, and
10. Supplemental integrity instructions

The responsibilities noted above are with reference to the data which may be found with one or more of the following numbers:

Transport Canada file number: C-12-1075  
*and / or*  
Project Reference number: 969  
*and / or*  
Approval Number: SH12-58

X

*Signature of Holder's authorized person:*

04 December 2012

*Date:*

*Position / Title:*

**B** Pursuant to the requirements of the CARs, Part V, Subpart 521, Chapter 160:  
AERO Design Ltd. agrees to administer the preceding responsibilities on  
behalf of the holder of the approval(s) below, on a fee for service basis.

per:

*Signature*

X

*Signature of Holder's authorized person:*

E. Burgoin

*Print Name*

Consultant

*Title*

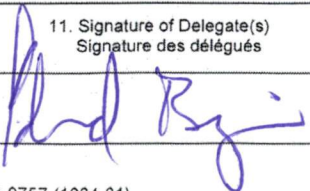
*Print Name*

*Date:*

*Date*



MINISTERIAL DELEGATE STATEMENT OF COMPLIANCE  
WITH THE CERTIFICATION BASISDÉLÉGUÉ MINISTÉRIEL CONSTAT DE CONFORMITÉ  
AVEC LA BASE DE CERTIFICATION

1. Reference No. / N° de référence NAPA File C-12-1075      Aero Design Project # 969		2. Applicant Name / Nom de demandeur Aero Design Ltd.	
Part 1: Identification of Aeronautical Product Partie 1 : Identification des produits aéronautiques			
3. Applicable Design Approval Document No. / N° du document d'approbation de la conception applicable H-107			
4. Model No. / N° de modèle 429		5. Make / Marque Bell Helicopter Textron Canada Ltd.	
6. Type (aircraft, engine, propeller, appliance, part) / Type (aéronef, moteur hélice, appareillage, pièce) Aircraft			
Part 2: Substantiating Reports and Data Partie 2 : Rapports et des données pertinentes			
7. Number / Numéro DCL969-1 Revision 0		8. Title / Titre Document Control List, and all documents referenced therein.	
DCL969-11 Revision 0		Document Control List, and all documents referenced therein.	
9. Purpose of Finding of Compliance / But de la constat de conformité <div><input type="checkbox"/> New approval: <input type="checkbox"/> Supplemental Type Certificate <input type="checkbox"/> Supplemental Type Certificate-Limited <input type="checkbox"/> Repair Design Certificate <input type="checkbox"/> Other: (briefly describe the applicable findings)</div> <div><input checked="" type="checkbox"/> Revise existing approval # SH12-58  Yes      The revised data requires the revision of the approval document. No      The revised data is within the scope of the accepted Certification Plan.</div>			
10. Applicable Elements of Certification Basis / Éléments applicables de la base de certification <input checked="" type="checkbox"/> Certification Plan: CP969 <input checked="" type="checkbox"/> Letter of exention of delegation, dated:			
Part 3: Ministerial Delegate Finding of Compliance with the Certification Basis Partie 3 : Délégué ministériel constat de conformité avec la base de certification			
Under the authority vested in me by the Minister under subsection 4.3(1) of the <i>Aeronautics Act</i> , I hereby find that the type design of the aeronautical product is in compliance with the certification basis as demonstrated by the applicant's substantiating reports and data to the best of my knowledge. En vertu des pouvoirs qui m'ont été conférés par le ministre conformément au paragraphe 4.3(1) de la <i>Loi sur l'Aéronautique</i> , j'estime que, à ma connaissance, la définition de type du produit aéronautique est conforme à sa base de certification tel qu'il a été démontré par les rapports et les données pertinentes fournis par le demandeur.			
11. Signature of Delegate(s) Signature des délégués 	12. Name / Nom E. Burgoin, Aero Design Ltd.	13. Delegate No. / N° de délégué DAR 290M	14. Date (yyyy-mm-dd) Date (aaaa-mm-jj) 12 December 2012


**MINISTERIAL DELEGATE STATEMENT OF COMPLIANCE  
WITH THE CERTIFICATION BASIS**
**DÉLÉGUÉ MINISTÉRIEL CONSTAT DE CONFORMITÉ  
AVEC LA BASE DE CERTIFICATION**

Block 7 (continued from sheet 1)

Document Number	Revision	Title	Comment
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ER969.01	0	Engineering Report	
96901	0	Fixed Cabin Step Installation	
96902	0	Quick Release Cabin Step Installation	
96910	0	Fixed Cabin Step Assembly	
96911	0	Quick Release Cabin Step Assembly	
96920	0	Fixed Cabin Step Bracket	
96921	0	Quick Release Cabin Step Bracket	
80010	0	Quick Release Cabin Step Assembly (Alternate)	
80020	0	Quick Release Cabin Step Bracket (Alternate)	

Documents listed below this line (if any) cannot be approved by the delegate:

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FMS969.90	0	Flight Manual Supplement	
ICA969.91	0	Instructions for Continued Airworthiness	

# AIRWORTHINESS REQUIREMENTS COMPLIANCE PROGRAM

APPLICANT: AERO Design Ltd.  
2013 39<sup>th</sup> Avenue NE  
Calgary, Alberta, T2E 6R7

DATE: 03 December 2012  
REV. No. 0

CORRESPONDANCE TO:  
(If other than applicant)

MAKE: Bell  
MODEL: 429

REGISTRATION: All Applicable  
SERIAL No.: All Applicable

NATURE OF WORK: Installation of Quick Release Cabin Step, Fixed Cabin Step

MODEL CERTIFICATION BASIS: CAR 527, Change 527-9  
MODIFICATION CERTIFICATION BASIS: CAR 527, Change 527-9

Airworthiness Requirement	Subject for Compliance or Documentary Proof	Form of Substantiation	DOT	DAR	Comments
<b>Subpart B – Flight</b>					
527.29	Empty Weight and Corresponding C of G Vibration	Data specified on inst'n drawing Statement in Report		X	
527.251				**	
<b>Subpart C – Strength Requirements</b>					
527.301	Loads – Air Drag/Lift Loads	Analysis		X	
527.301	Loads – Inertia Loads	Compliance with 527.337 and 527.561		X	
527.303	Factor of Safety	Analysis		X	
527.305	Strength and Deformation	Analysis and Test iaw AC 43.13-1B		X	
527.307	Proof of Structure	Analysis and Test iaw AC 43.13-1B		X	
527.337	Limit Maneuvering Load Factor – Positive	Analysis and Test iaw AC 43.13-1B		X	Step not intended for use in flight, no personnel loads, same as original configuration
527.561	Emergency Landing Conditions	N/A		X	Step is located below cabin
<b>Subpart D – Design and Construction</b>					
527.601	Design	Specification on Drawings		X	Design is conventional.
527.603	Materials	Specification on Drawings		X	Materials used are specified in AR-MMPDS-01.
527.605	Fabrication Methods	Specification on Drawings		X	Design is conventional.
527.609	Protection of Structure	Specification on Drawings		X	
527.611	Inspection Provisions	Specification on Drawings		X	Design is easy to inspect.
527.613	Material Strength Properties and Design Values	Values used as per AR-MMPDS-01		X	
527.625	Fitting Factor	Analysis		X	
527.1387	Position Light System Dihedral Angles	N/A			No change from Type Approval.
527.1401	Anticollision Light System	N/A			No change from Type Approval.



AIRWORTHINESS REQUIREMENTS  
COMPLIANCE PROGRAM

Airworthiness Requirement	Subject for Compliance or Documentary Proof	Form of Substantiation	DOT	DAR	Comments
527.1529	Instructions for Continued Airworthiness	ICA Provided	X		
527.1581	Rotorcraft Flight Manual	FMS Provided	X		Installation/Removal instructions provided

Items marked \*\* indicate chapters where extension of delegation is requested.

Department of Transport

# Supplemental Type Certificate

This approval is issued to:

AERO Design Ltd.  
2013 39<sup>th</sup> Avenue NE  
Calgary, Alberta  
Canada T2E 6R7

**Number:** SH12-58

**Issue No.:** 2

**Approval Date:** November 16, 2012

**Issue Date:**

**Responsible Office:**

Prairie and Northern

**Aircraft/Engine Type or Model:**

Bell 429

**Registration/Serial No.:**

All eligible

**Canadian Type Certificate or Equivalent:**

H-107 (Bell 429)

**Description of Type Design Change:**

Installation of External Attachment Provisions, Cargo Basket, and Cabin Steps.

**Installation/Operating Data, Required Equipment and Limitations:**

**Configuration A – External Attachment Provisions Only:**

Installation of the External Attachment Provisions to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL959-2, Revision 0, dated 28 September 2012, or later approved revision.

External Attachment Provisions installed in accordance with DCL959-2 may remain installed if the basket installation is removed.

**Configuration B – External Cargo Basket:**

Installation of Configuration A, External Attachment Provisions, is a prerequisite for installation of Configuration B, External Cargo Basket Installation. Installation of Quick Release Cargo Basket to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL959-1, Revision 0, dated 28 September 2012, or later approved revision.

(continued)

DRAFT.

**Conditions:** This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated **will not** adversely affect the airworthiness of the modified product.

For Minister of Transport



**Configuration C – Cabin Steps:**

Installation of Configuration A, External Attachment Provisions, is a prerequisite for installation of Configuration C, Cabin Steps Installation. Installation of Cabin Steps to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL969-1, Revision 0, dated 12 December 2012, or later approved revision.

Transport Canada approved, AERO Design Ltd. Flight Manual Supplement FMS969.90, Revision 0, dated 03 December 2012, or later approved revision is required with this installation.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA969.91, Revision 0, dated 30 November 2012, or later accepted revision is required with this installation.

**Cargo Basket Modifications:**

Modifications to the Cargo Basket configurations are eligible in accordance with Transport Canada approved, AERO Design Ltd., Document Control List DCL704, Revision 6, dated 29 April 2010, or later approved revision. Eligibility limitations are noted on the drawings.

**Data Pertinent to Configurations A and B:**

Transport Canada approved, AERO Design Ltd. Flight Manual Supplement FMS959.90, Revision 0, dated 08 November 2012, or later approved revision is required with this installation.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA959.91, Revision 0, dated 28 September 2012, or later accepted revision is required with this installation.

**Basis of Certification:**

Basis of certification remains as defined in the applicable Type Certificate Data Sheets.

– End –



Transport  
Canada

Transports  
Canada

1100-9700 Jasper Avenue  
Edmonton, Alberta  
T5J 4E6

Your file      Votre référence  
969

Our file      Notre référence  
C-12-1075  
5010-0402

December 11, 2012

AERO Design Limited  
2013 - 39 Ave. NE  
Calgary, AB  
T2E 6R7

**ATTENTION:      EDWARD BURGOIN – DAR 290M**

Dear Sirs:

**SUBJECT:      Extension of DAR 290M Authority – Quick Release Cargo Basket/Step Installation  
Bell 429 – Approval Number SH12-58 – Issue 2**

This letter is in response to your December 3, 2012, request for extension of delegation to cover the subject design change. You are hereby authorized to make findings of compliance against CAR 527 for the following compliance paragraph as listed in Compliance Plan CP969:

527.251              Vibration

This is a one-time extension and is to be exercised for this approval only. Approval number SH12-58 - Issue 2 has been assigned for your use.

If you have any questions or wish to discuss this project further, please contact the project OPI, Jack Staal at Telephone 780-495-5227 of the Edmonton TCC.

Yours truly,

F.J.B. Wright  
Technical Team Lead, Engineering  
Civil Aviation  
Prairie and Northern Region  
Phone: 780-495-3856  
Facs: 780-495-7963

Canada

# DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
<b>INSTALLATION DOCUMENTS</b>		
96901	Fixed Cabin Step Installation	0
96902	Quick Release Cabin Step Installation	0
FMS969.90	Flight Manual Supplement for Quick Release Step	0
ICA969.91	Instructions for Continued Airworthiness	0
 <b>FABRICATION DOCUMENTS</b>		
DCL969-11	Document Control List for Step Fabrication	0
APPROVAL:	ORIGINAL DATE: 12 December 2012  REVISION DATE:	<b>AERO DESIGN LTD.</b> 2013 – 39 <sup>th</sup> Ave NE, Calgary, Alberta, T2E 6R7 Ph. (403) 250-8027 Fax. (403) 250-8333 <a href="http://www.aerodesign.ca">www.aerodesign.ca</a>
	SHEET 1 OF 1	<b>Bell 429 Cabin Steps Installation</b>
	<div style="display: flex; justify-content: space-between; align-items: center;"> <span style="font-size: 2em; font-weight: bold;">DCL969-1</span> <div style="text-align: right;">                         Rev.  <span style="font-size: 2em; font-weight: bold;">0</span> </div> </div>	
	<div style="display: flex; justify-content: space-between; align-items: center;"> <span style="font-size: 2em; font-weight: bold;">DCL969-1</span> <div style="text-align: right;">                         Rev.  <span style="font-size: 2em; font-weight: bold;">0</span> </div> </div>	

# DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
<b>FABRICATION DOCUMENTS</b>		
96910	Fixed Step Assembly	0
96911	Quick Release Step Assembly	0
96920	Fixed Step Brackets	0
96921	Quick Release Step Brackets	0
80010	Quick Release Step Assembly (Alternate)	1
80020	Quick Release Step Brackets	0
<b>ENGINEERING DOCUMENTS</b>		
ER969.01	Engineering Report	0
APPROVAL:	ORIGINAL DATE: 12 December 2012	<b>AERO DESIGN LTD.</b> 2013 – 39 <sup>th</sup> Ave NE, Calgary, Alberta, T2E 6R7 Ph. (403) 250-8027 Fax. (403) 250-8333 <a href="http://www.aerodesign.ca">www.aerodesign.ca</a>
	REVISION DATE:	
	SHEET 1 OF 1	<b>Bell 429</b> <b>Cabin Steps</b> <b>Fabrication</b>
	<div> <div>DCL969-11</div> <div>Rev. 0</div> </div>	



**AERO Design Ltd.**

**ENGINEERING REPORT**  
**ER969.01**

---

**BELL 429**

**CABIN STEPS**

Prepared by: Jeff Clarke, CET

Approved by: E. Burgoin, DAR 290M

Revision 0, 03 December 2012

---

AERO Design Ltd.  
*Engineering Consultants*  
www.aerodesign.ca

2013 – 39<sup>th</sup> Avenue N.E., Calgary, Alberta T2E 6R7

Phone: (403) 250-8027

Fax: (403) 250-8333

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## 1.0 INTRODUCTION

Installation of the Cargo Basket mounting provisions requires removal of the existing Bell cabin step assembly. This leaves the helicopter with no cabin access steps. The cabin step installations covered by these instructions use the cargo basket mounting provisions to provide for cabin access steps on both sides of the helicopter. The Fixed Cabin Step installation consists of a step assembly that is installed on the opposite side of the helicopter that the basket is installed on. The Quick Release Cabin Step installation is installed in place of the cargo basket when it is not required, and uses the cargo basket locking mechanism to retain it in the mounting provisions.

The step itself consists of an aluminum extrusion welded to machined aluminum brackets. Strips of non-slip tape are adhered to the top of the step.

This report demonstrates that the cabin step installations meet the requirements of the basis of certification

## 2.0 REFERENCE TEXT

AERO Design Ltd. Drawings 96901, 96902

AERO Design Ltd. Engineering Reports ER959.01, ER959.02, ER800.02

AR-MMPDS-01 - Metallic Materials Properties Development and Standardization

Hoerner, Dr. Sighard F., *Fluid-Dynamic Drag*, Hoerner Fluid Dynamics, Bricktown New Jersey, 1965

## 3.0 BASIS OF CERTIFICATION

Bell 429, TCDS H-107:

Airworthiness Manual (AWM) Chapter 527 -*Normal Category Rotorcraft* at Change 527-9 published December 1, 2009 (equivalent to FAR Part 27 at Amdt 27-44), including Appendix B for IFR and Appendix C for Category A, except for AWM 527.1457 and 527.1459 at Change 527-6, plus:

FAR Part 27, Amdt 27-44, effective June 16, 2008 as adopted by reference.

AWM Chapter 527 Appendix C -*Criteria for Category A* specifies certain sections of AWM Chapter 529 -*Transport Category Rotorcraft*. For these specified sections, AWM Chapter 529 at Change 529-6 published June 30, 2008 (equivalent to FAR 29 at Amdt 29-45) is applicable, plus FAR 29.1587(a)(7) Amdt 29-51, effective March 31, 2008 as adopted by reference.

*This report demonstrates that the installation of the Cabin Steps complies with the original basis of certification.*

## 4.0 APPLICABILITY OF AIRWORTHINESS DIRECTIVES

Airworthiness Directives applicable to the Bell 429 were reviewed, and none were found to affect this project.

## 5.0 LOADS

### 5.1 Load Factors

CAR 527.303	Safety Factor:	$n_{sf} := 1.5$
CAR 527.337(a)	Limit Positive Maneuvering Load Factor:	$n_{man} := 3.5$
$n_{man\_ult} := n_{man} \cdot n_{sf}$	Ultimate Positive Maneuvering Load Factor:	$n_{man\_ult} = 5.25$
	Limit Negative Maneuvering Load Factor:	$n_{man\_neg} := -1.0$
$n_{man\_neg\_u} := n_{man\_neg} \cdot n_{sf}$	Ultimate Negative Maneuvering Load Factor:	$n_{man\_neg\_u} = -1.5$
CAR 527.561(d)		
Emergency Landing conditions do not apply. The step is not located above or behind the occupants of the cabin, and deflection or failure of the step does not endanger the occupants of the cabin.		
CAR 527.625	Fitting Factor (does not apply to articles being tested):	$n_{ff} := 1.15$

### 5.2 Maneuvering Load

The steps are not intended to be used in flight, therefore the maneuvering load factors do not apply to an occupant of the step.

$$W_{step} := 6.0 \text{ lbf} \quad \text{Weight of step}$$

#### Positive Maneuvering Load

$$P_{man\_lim} := W_{step} \cdot n_{man\_lim}$$

$$P_{man\_lim} = 21 \text{ lbf} \quad \text{Limit maneuvering load due to step assembly}$$

$$P_{man\_ult} := P_{man\_lim} \cdot n_{sf}$$

$$P_{man\_ult} = 32 \text{ lbf} \quad \text{Ultimate maneuvering load due to step assembly}$$

#### Negative Maneuvering Load

$$P_{man\_lim\_neg} := W_{step} \cdot n_{man\_neg}$$

$$P_{man\_lim\_neg} = -6 \text{ lbf} \quad \text{Limit negative maneuvering load due to step assembly}$$

$$P_{man\_ult\_neg} := P_{man\_lim\_neg} \cdot n_{sf}$$

$$P_{man\_ult\_neg} = -9 \text{ lbf} \quad \text{Ultimate negative maneuvering load due to step assembly}$$



### 5.3 Step Load

Bell Helicopter Textron Canada Ltd. has provided the design load cases for the original cabin step as follows (see appendix A):

$$W_{\text{person}} = 200\text{lbf} \quad \text{Weight of person on step}$$

#### Bell Current Configuration - Load Case 1

$$P_{\text{Bell\_lim\_1}} := 3 \cdot W_{\text{person}} \cdot 1.5$$

$$P_{\text{Bell\_lim\_1}} = 900\text{lbf} \quad \text{Limit load due to 3 people - Bell Load Case 1}$$

$$P_{\text{Bell\_ult\_1}} := P_{\text{Bell\_lim\_1}} \cdot n_{\text{sf}}$$

$$P_{\text{Bell\_ult\_1}} = 1350\text{lbf} \quad \text{Ultimate load due to 3 people - Bell Load Case 1}$$

#### Bell Current Configuration - Load Case 2

$$P_{\text{Bell\_lim\_2}} := 2 \cdot W_{\text{person}} \cdot 2$$

$$P_{\text{Bell\_lim\_2}} = 800\text{lbf} \quad \text{Limit load due to 2 people - Bell Load Case 2}$$

$$P_{\text{Bell\_ult\_2}} := P_{\text{Bell\_lim\_2}} \cdot n_{\text{sf}}$$

$$P_{\text{Bell\_ult\_2}} = 1200\text{lbf} \quad \text{Ultimate load due to 2 people - Bell Load Case 2}$$

### 5.4 Aerodynamic Loads

#### Drag Load

$$A_f := 16.38\text{in}^2 \quad \text{Frontal Area of step}$$

$$C_{\text{Do}} := 2.0 \quad \text{Drag Coefficient of Basket, (overestimated)}$$

$$\rho := 0.002378 \frac{\text{slug}}{\text{ft}^3} \quad \text{Density of air at Sea Level.}$$

$$V_{\text{ne}} := 155\text{knots} \quad \text{Never-Exceed-Speed of Bell 429. (Ref. Bell 429 Flight Manual.)}$$

$$V_d := \frac{V_{\text{ne}}}{0.9}$$

$$V_d = 172\text{knots} \quad \text{Design Dive Speed of Bell 429}$$

$$P_{\text{drag\_lim}} := \frac{\rho}{2} \cdot V_d^2 \cdot A_f \cdot C_{\text{Do}}$$

$$P_{\text{drag\_lim}} = 23\text{lbf} \quad \text{Limit Drag load on step}$$

$$P_{\text{drag\_ult}} := P_{\text{drag\_lim}} \cdot n_{\text{sf}}$$

$$P_{\text{drag\_ult}} = 34\text{lbf} \quad \text{Ultimate Drag load on step}$$

## Lift Load

$$A_{\text{lift}} := 74\text{in} \cdot 3.28\text{in}$$

$$A_{\text{lift}} = 242.7\text{in}^2$$

Planar Area of step

Coefficient of lift for round tubes relative to airflow varies from near 0 at 0 degree to 0.4 at about 60 degrees.

$$C_L := 0.4$$

Lift Coefficient of step (max for round tube at ~60 degrees)  
Ref: Fluid-Dynamic Drag, Figure 18

$$P_{\text{lift\_lim}} := \frac{\rho}{2} \cdot V_d^2 \cdot A_{\text{lift}} \cdot C_L$$

$$P_{\text{lift\_lim}} = 68\text{lbf}$$

Limit lift load on step

$$P_{\text{lift\_ult}} := P_{\text{lift\_lim}} \cdot n_{sf}$$

$$P_{\text{lift\_ult}} = 102\text{lbf}$$

Ultimate lift load on step

## 6.0 STRUCTURAL COMPLIANCE

### 6.1 Step Assembly

The fixed step assembly and quick release step assembly use the same aluminum extrusion, and are the same length. Structural compliance for the step assembly is demonstrated by test.

A section of step extrusion was set on wood blocks, supported at the same distance as the mounts on the helicopter (74.75"). Bags of lead shot, 25 lbs each, were stacked on the top surface of the step, on a sheet of plywood to stabilize the bags, to simulate the downward load. The critical load case is Bell Load Case 1:

$$P_{\text{Bell\_lim\_1}} = 900\text{lbf}$$

Limit load due to 3 people - Bell Load Case 1

$$P_{\text{Bell\_ult\_1}} = 1350\text{lbf}$$

Ultimate load due to 3 people - Bell Load Case 1

The step was loaded with 1200 lbs (48 bags), see figures 6.1.1 and 6.1.2. The load was supported for more than 3 seconds, and then was removed and the extrusion checked for permanent deformation. There was no permanent deformation found.

The 1200 lbs was then loaded back on the step. Testing continued by loading a bag of lead, waiting 3 seconds, and repeating until the step failed. The step failed in buckling as the 70<sup>th</sup> bag was loaded. The step supported 1725 lbs (69 bags) for 3 seconds without failure. See figures 6.1.3 and 6.1.4.



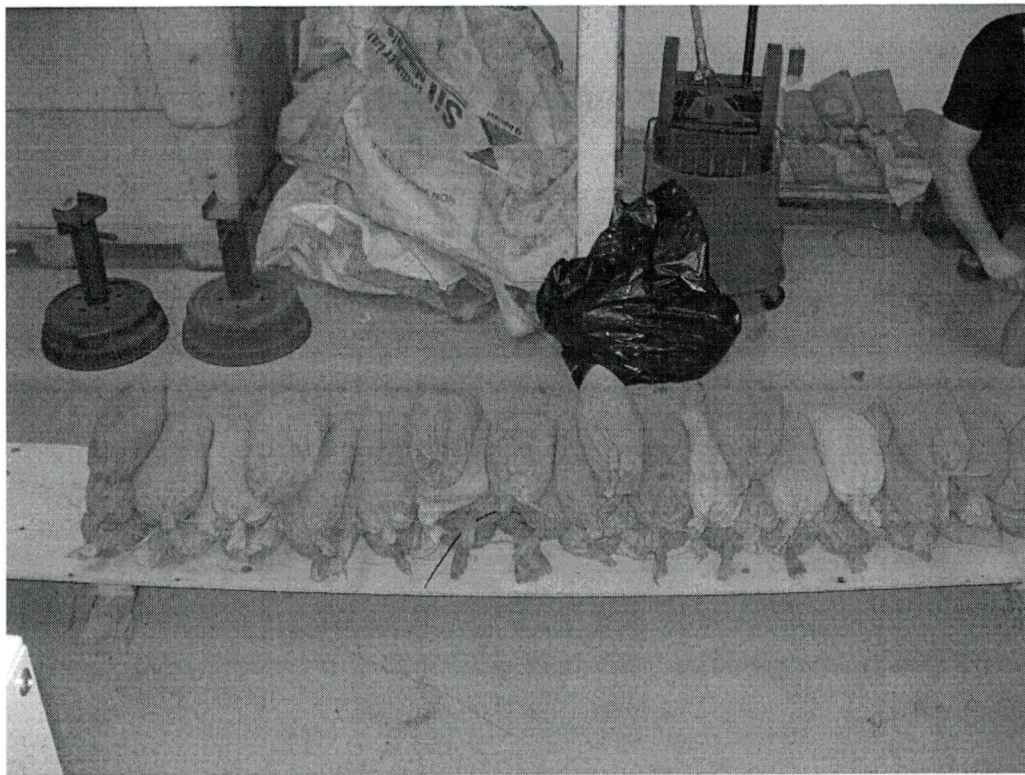


Figure 6.1.1 – Limit Load

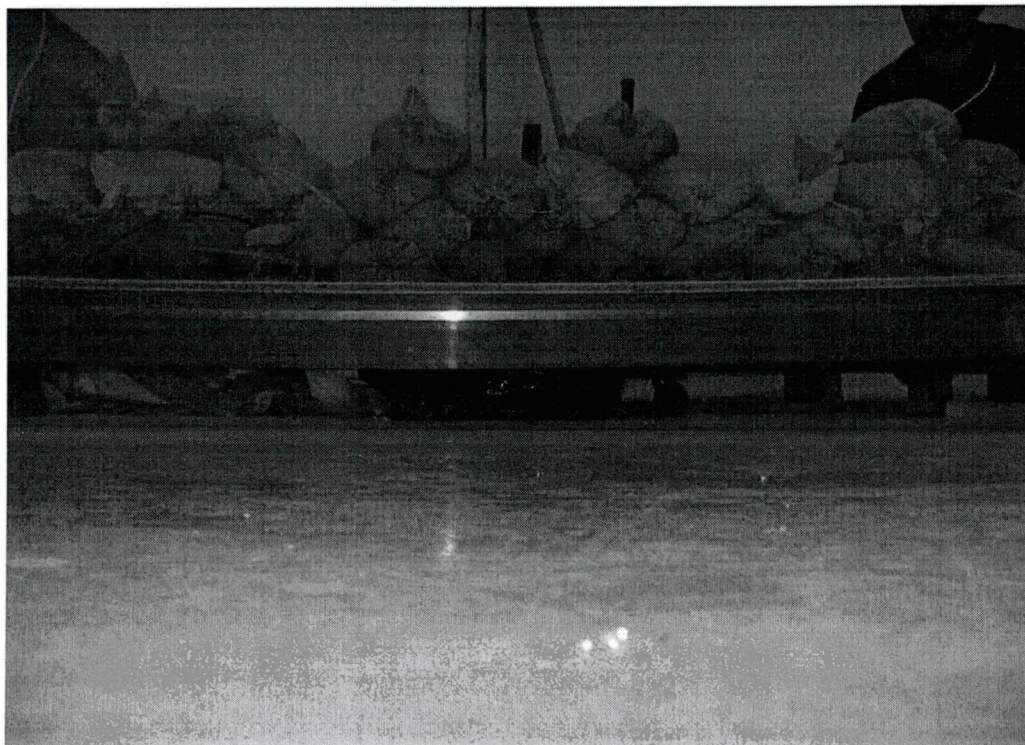


Figure 6.1.2 – Step at Limit Load



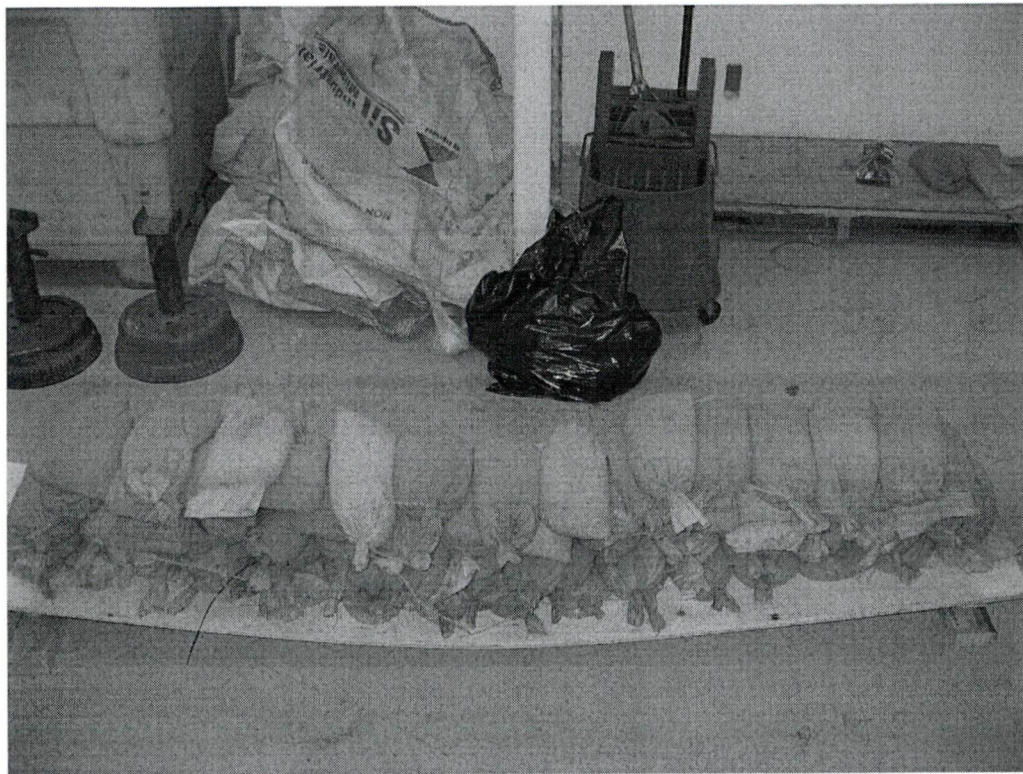


Figure 6.1.3 – Ultimate Load - Failure

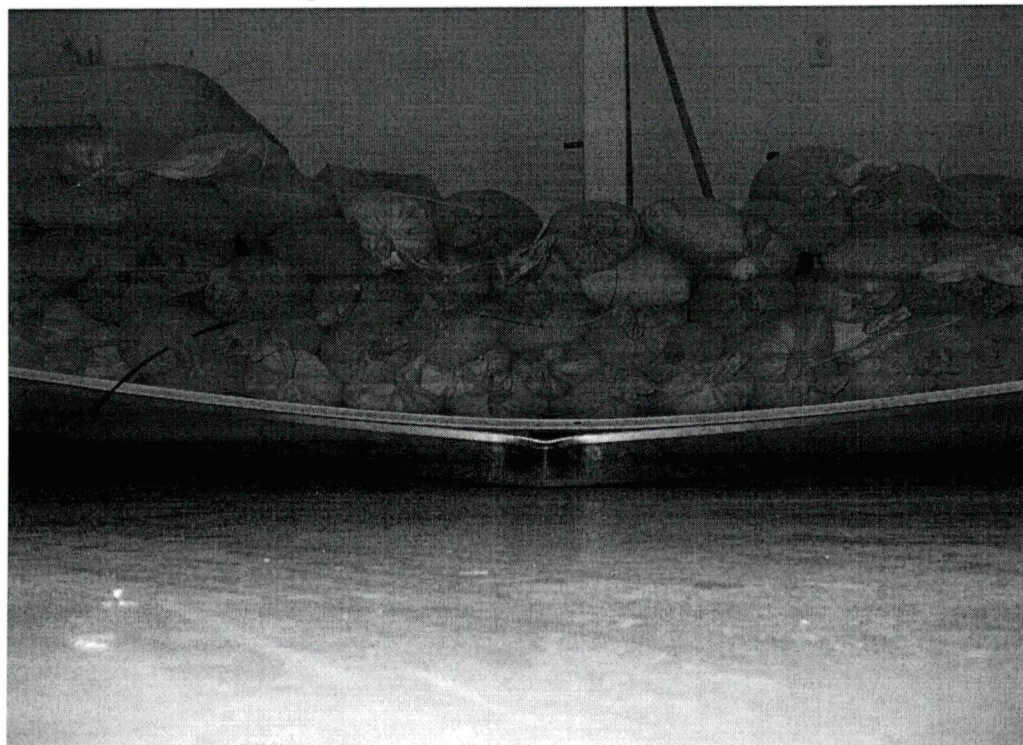


Figure 6.1.4 – Step at failure



The step section supported loads much higher than required. The step section is acceptable.

## 6.2 Step Assembly – Alternate Configuration

The alternate configuration, 96902-11-XX, uses the cabin step from the Bell 206L/407 configuration 80002-01. The mounting points are located the same distance apart. The extrusion used in this configuration is heavier than in the 96902-01-XX configuration. The step was tested to 1800 lbs ultimate load with no permanent deformation or failure, see ER800.02. The alternate step configuration is acceptable.

## 6.3 Fuselage Attachments – Fixed Step

The fixed step is installed opposite to the cargo basket. The reaction loads applied by the fixed step installation counteract the reaction loads applied by the cargo basket installation, see figure 6.3.1. This serves to reduce the reactions at each mounting point for the beam assembly, and reduces the bending moment over the length of the mounting beam.

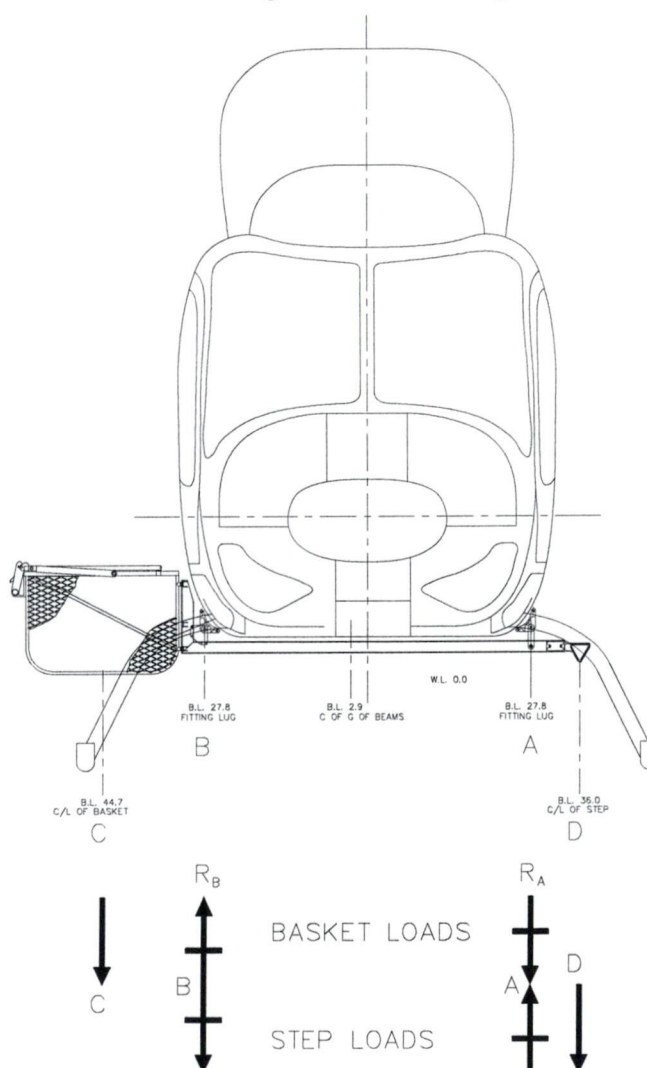


Figure 6.3.1 – Fixed Step and Cargo Basket Loads

**AFT SUPPORT BEAM REACTIONS - FIXED STEP INSTALLATION**

Critical Load on Aft Support Beam applied at FS 238.6 and BL -36.0

Ult. Load on aft beam due to people on step assembly

Moments about FS 163.8

$$P_{ult\_aft} := \frac{(P_{Bell\_ult\_1}) \cdot (201.25 - 163.8)}{238.6 - 163.8}$$

$$P_{ult\_aft} = 675.9 \text{ lbf}$$

Ultimate Reaction on aft beam  
applied at FS238.6 and BL 36.0

$$AD := 36.0 + 27.8$$

Distance A-D

$$AB := 27.8 + 27.8$$

Distance A-B

Ult. Reactions at helicopter step supports due to step occupants only,  
weight of step not considered.

Moments about B (BL 26.5)

$$R_{a\_rear} := \frac{-P_{ult\_aft} AD}{AB}$$

$$R_{a\_rear} = -775.6 \text{ lbf}$$

Reaction at A due to occupant of step

$$R_{b\_rear} := -(P_{ult\_aft} + R_{a\_rear})$$

$$R_{b\_rear} = 99.7 \text{ lbf}$$

Reaction at B due to occupant of step

The weight of the beam in the step loading condition is not significant and is not included.

The reactions on the mounting points from the cargo basket installation from ER959.01 are used as the allowable loads. That section is copied below:

**AFT SUPPORT BEAM REACTIONS**

Critical Load on Aft Support Beam applied at FS 238.6 and BL 44.7

Ult. Load on aft beam due to **LONG** basket, aft beam and max cargo load

Moments about FS 163.8

$$P_{ult\_aft} := \frac{(W_{basket} + W_{cargo}) \cdot n_{man} \cdot n_{sf} \cdot n_{ff} (211.6 - 163.8)}{238.6 - 163.8}$$

$$P_{ult\_aft} = 1433.5 \text{ lbf}$$

applied at FS238.6 and BL 44.7

for max cargo weight:

$$W_{cargo} = 300 \text{ lbf}$$

$$AC := 44.7 + 27.8$$

$$AB := 27.8 + 27.8$$

Ult. Reactions at helicopter step support  
at point B

Moments about A (BL -27.8) for point B

$$R_{b\_rear} := \frac{-P_{ult\_aft} AC}{AB} - 0.65(W_{beam} \cdot n_{man} \cdot n_{sf} \cdot n_{ff})$$

$$R_{b\_rear} = -1926.9 \text{ lbf}$$

Assumes 65% of beam weight acts on  
basket side fitting

Moments about B for point A

$$R_{a\_rear} := \frac{P_{ult\_aft}(44.7 - 27.8)}{27.8 + 27.8} - 0.35(W_{beam} \cdot n_{man} \cdot n_{sf} \cdot n_{ff})$$

$$R_{a\_rear} = 404.7 \text{ lbf}$$

Assumes 35% of beam weight acts on  
basket opposite side fitting

The maximum reaction load due to the step, 775.6 lbs at A, does not exceed the maximum reaction load due to the basket installation, 1926.9 at B. The loads from the cargo basket installation were found to be acceptable for loading on the fuselage, see ER959.01, and the step loads are less. The fixed step installation is acceptable.

#### 6.4 Fuselage Attachments – Quick Release Step

The quick release step uses the same attachments as the quick release cargo basket. The mounting beams have been demonstrated by test (ref: ER959.02) to support a basket loaded with:

- 1250 lbs limit load without permanent deformation and
- 1900 lbs ultimate load without failure

These loads are greater than the applied loads from the step. Loads from the cargo basket are applied farther out than the step loads, so the bending moment due to the step is lower. Installation of the quick release step assembly is acceptable.

#### 6.5 Aerodynamic Loads

The ultimate aerodynamic drag load of 34 lbs is small and by inspection can be carried by both the fixed and quick release attachments.

The ultimate aerodynamic lift load of 102 lbs is relatively small compared to the personnel loading. By inspection, the extrusion can support this load without permanent deformation or failure. The attachments have been demonstrated to support a higher negative maneuvering load, see ER959.02.

## **7.0 COMPLIANCE WITH CAR 527.251**

The fixed step assembly 95910-01 was installed on the flight test helicopter during certification flight testing for the cargo basket installation. There was no vibration due to the step noted during flight testing.

Construction and length of the fixed step and quick release step is identical. Since there was no vibration due to the fixed step, there will be no vibration due to the quick release step.



## **APPENDIX A**

### **STEP LOAD CONFIGURATIONS FROM BELL HELICOPTER TEXTRON CANADA LTD.**

**From:** Bliss, Geoffrey [mailto:gbliss@bh.com]  
**Sent:** Wednesday, December 05, 2012 12:53 PM  
**To:** Ted Burgoin  
**Subject:** FW: 429 step design criteria for AeroDesign  
**Importance:** High

Ted, please see below.

Geoff

**From:** Faessler, Walter  
**Sent:** Monday, December 03, 2012 1:05 PM  
**To:** Bliss, Geoffrey  
**Subject:** 429 step design criteria for AeroDesign  
**Importance:** High

Geoff,

Can you please provide the following info to Ted Burgoin.

Original 429 PAX step design criteria: 3 persons at 200 lb each times 2g limit (times 1.5 ultimate), rationally distributed.

Revised 429 PAX step design criteria as part of cost and weight reduction: worse of either 3 persons at 200 lb each times 1.5g limit (times 1.5 ultimate), or, 2 persons at 200 lb each times 2g limit (times 1.5 ultimate), again, rationally distributed.

Notwithstanding, AeroDesign should provide us with the reactions from their PAX step associated with their cargo basket so we can confirm adequacy of the airframe.

Many thanks,

Walter

AERO DESIGN

RE Ruth Hinton

early

[ 3 200 2g limit  
1.5 vlt  
later

later  
SW

781

[ 3 200 1.5 g limit  
1.5  
2 200 2g limit

0552

0 load 7 $\frac{1}{4}$  @ centre

48 bags 5 $\frac{3}{4}$  @ centre

54 bags failure

25

270

1081

1350 lb total

---

0

7 $\frac{1}{4}$

48

6 $\frac{1}{8}$

1200 lb limit

69

failure

25

345

1381

1725



## BELL 429

### **ROTORCRAFT FLIGHT MANUAL SUPPLEMENT** for the **INSTALLATION of the AERO DESIGN** **QUICK RELEASE CABIN STEP**

Canadian Supplemental Type Certificate No. SH12-58  
FAA Supplemental Type Certificate No. XX  
EASA Supplemental Type Certificate No. XX

Sections I, II, III and IV of this document comprise the Transport Canada Approved sections of this Flight Manual Supplement. Compliance with Section I, Limitations, is mandatory.

Section V and any subsequent sections if present are Unapproved and are provided for information only.

The information and data contained in this Flight Manual Supplement supersede or supplement that contained in the basic Approved Flight Manual for the Bell 429 when fitted with the Quick Release Cabin Step Installation. For limitations, procedures and performance not listed in this Flight Manual Supplement, refer to the Approved Flight Manual and other approved Flight Manual Supplements.

**Table of Contents**

I	Limitations	3
II	Normal Procedures	3
III	Emergency Procedures	3
IV	Performance	3
V	Weight and Balance	4
VI	Installation / removal instructions	5

**Record of Revisions**

Revision	Issue Date	Pages Revised	Date Inserted	By
0	03 Dec 2012	None		

## **I LIMITATIONS**

No change from basic Approved Flight Manual.

## **II NORMAL PROCEDURES**

1. Pre-flight inspections:

- a) Ensure the step is locked in position on the beams. Pull up on the aft end of the step to check.

## **III EMERGENCY PROCEDURES**

No change from basic Approved Flight Manual.

## **IV PERFORMANCE**

No change from basic Approved Flight Manual.

## V WEIGHT AND BALANCE

1. The following weight and balance is for the quick release cabin step configuration, installed in accordance with drawing 96902.

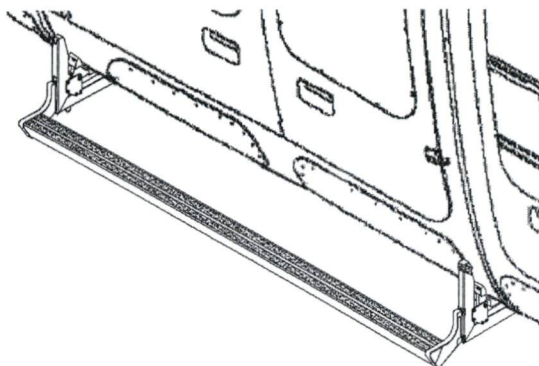


Figure V.1 – Quick Release Cabin Step (95902-01 Configuration)

96902-01-XX Quick Release Cabin Step Configuration

Item	Weight	Longitudinal		Lateral	
		Arm	Moment	Arm	Moment
Step Only <sup>1</sup>	6.0 lb	201.25 in	1207.50 in*lb	+/-35.76 in	+/-214.56 in*lb
	2.7 kg	5112 mm	13912 mm*kg	+/-908 mm	+/-2472 mm*kg

96902-11-XX Quick Release Cabin Step Configuration (Alternate)

Item	Weight	Longitudinal		Lateral	
		Arm	Moment	Arm	Moment
Step Only <sup>1</sup>	8.2 lb	201.25 in	1650.25 in*lb	+/-30.65 in	+/-251.33 in*lb
	3.7 kg	5112 mm	19013 mm*kg	+/-779 mm	+/-2896 mm*kg

<sup>1</sup> Weight and balance is for Quick Release Cabin Step only. Mounting beams and attachment provisions are not included since they are included in the basic rotorcraft weight and balance at time of initial installation.



## VI INSTALLATION / REMOVAL INSTRUCTIONS

The Quick Release Mounting Provisions are installed in accordance with drawing 95902. The Quick Release Cabin Step is installed in accordance with drawing 96902. Removal of the step leaving the beams in place is an approved configuration for flight. Logbook entry indicating installation or removal of basket and which weight and balance amendment is in effect is required.

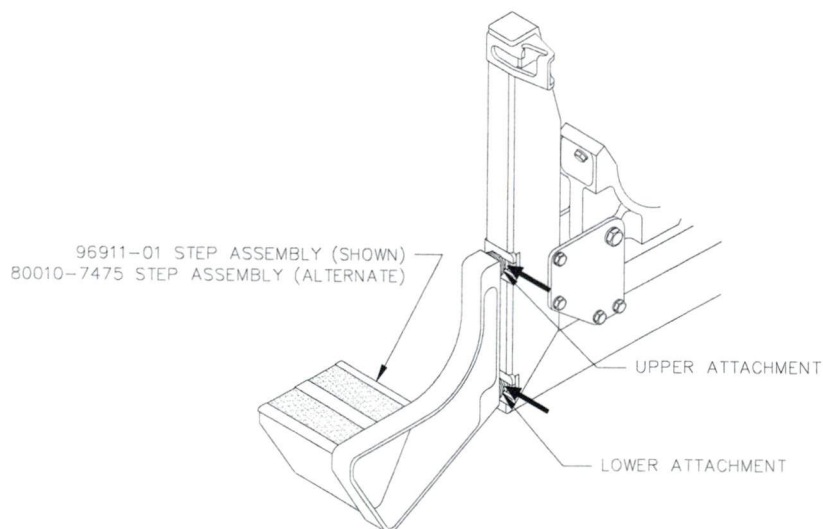


Figure VI.1 – Forward Step Attachment

1. Step Installation - Refer to Figure VI.1 and VI.2.
  1. Slide forward attachments of Quick Release Step Assembly 96911-01 (or 80010-7475, alternate configuration) into forward mounting beam.
  2. At aft end, rotate step inboard and pull step aft to aft mounting beam. Align attachment fittings on step with keyways, push step in and down to engage attachments into keyways on aft beam. Pin at lower attachment will spring into place with a snap.
  3. Check that step is secure by pulling up on aft end.

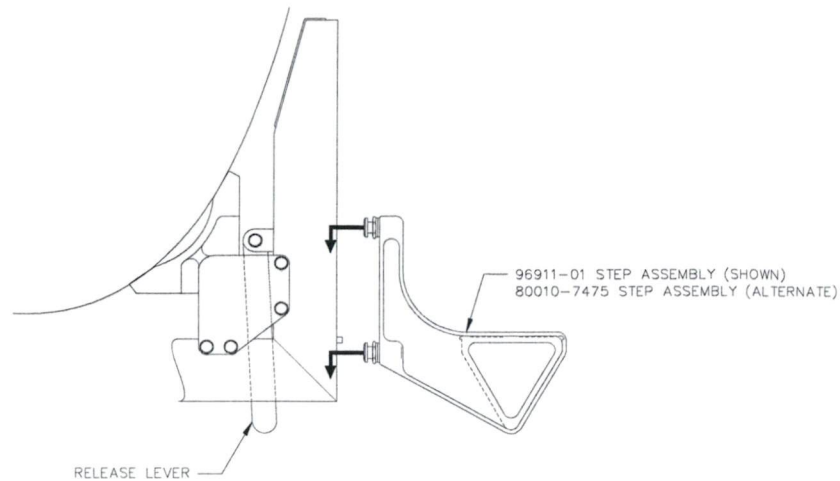


Figure VI.2 – Aft Basket Attachment

2. Basket Removal - Refer to Figure VI.1 and VI.2.
  1. Pull lever at bottom end of aft beam inboard to retract retaining pin and lift step until lower attachment fitting is free of keyway. Keep upper attachment in slot in beam.
  2. Lift step until upper attachment is out of keyway on aft beam. Rotate aft end outboard and slide step forward until forward attachments are free from keyways in forward beam.

# MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

## APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT – CAR 527

### BLOCK 1

Name of the applicant for the design change approval:	Aero Design Ltd.
Description of the design change:	Installation of Quick Release Cargo Baskets on Bell 429
Certification Basis of design change and revision date:	CAR 527, Change 527-9
CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:	Section 0-3 of Supplemental ICA (ICA 969.91)
CAR Standard 513.05 (1) (g) (iv): Installation Instructions:	Installation Drawing 96901, 96902

### BLOCK 2

Note: Enter "N/A" when no supplemental ICA are needed.

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
<b>A527.2 (a) Manual(s)</b> (a) The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.	ICA ref: Bell 429 Maintenance Manual, BHT-429-MM	Supplemental ICA ref: Single Manual (ICA969.91)
<b>A527.2 (b) Practical arrangement</b> (b) The format of the manual or manuals must provide for a practical arrangement.	ICA ref: Bell 429 Maintenance Manuals	Supplemental ICA ref: Arranged in ATA format
<b>A527.3</b> The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
<b>A527.3 (a) Rotorcraft maintenance manual or section</b>		
<b>A527.3 (a) (1) (Introduction)</b> (1) Introduction information that includes an explanation of the rotorcraft's features and data to the extent necessary for maintenance or preventive maintenance.	ICA ref: Bell 429 Maintenance Manual, Chapter 1	Supplemental ICA ref: Section 0-1
<b>A527.3 (a) (2) (Description)</b> (2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances.	ICA ref: Bell 429 Maintenance Manual, Chapter 1	Supplemental ICA ref: Section 0-5



### MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
<b>A527.3 (a) (3) Control &amp; Operation</b> (3) Basic control and operation information describing how the rotorcraft components and systems are controlled and how they operate, including any special procedures and limitations that apply.	ICA ref: N/A	Supplemental ICA ref: N/A
<b>A527.3 (a) (4) Servicing</b> (4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and levelling information.	ICA ref: Bell 429 Maintenance Manual, Chapter 12	Supplemental ICA ref: N/A
<b>A527.3</b> The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
<b>A527.3 (b) Maintenance Instructions.</b>		
<b>A527.3 (b) (1) Scheduling</b> 1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross-references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft.	ICA ref: Bell 429 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
<b>A527.3 (b) (2) Troubleshooting</b> (2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions.	ICA ref: N/A	Supplemental ICA ref: N/A



**MSI 53 – Review of Supplemental Instructions for Continued Airworthiness**

<b>Regulatory Standard Reference Column 1</b>	<b>Design Approval Holder (DAH) ICA Reference Column 2</b>	<b>Applicant Means of Compliance Supplemental ICA Requirements Column 3</b>
<b>A527.3 (b) (3) Removal/replacement</b> (3) Information describing the order and method of removing and replacing products and parts with any necessary precautions to be taken.	ICA ref: Bell 429 Maintenance Manual, Chapter 25	Supplemental ICA ref: Section 32-1 thru 32-4
<b>A527.3 (b) (4) General</b> (4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations.	ICA ref: Bell 429 Maintenance Manual, Chapter 7 and 8	Supplemental ICA ref: Section 32-6
<b>A527.3 (c) Access</b> (c) Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	ICA ref: N/A	Supplemental ICA ref: N/A
<b>A527.3 (d) Special inspections</b> (d) Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified.	ICA ref: Bell 429 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
<b>A527.3 (e) Protective treatment</b> (e) Information needed to apply protective treatments to the structure after inspection.	ICA ref: Bell Standard Practices Manual BHT-ALL-SPM, Chapter 3	Supplemental ICA ref: Section 5-3
<b>A527.3 (f) Fasteners, torque values, etc</b> (f) All data relative to structural fasteners such as identification, discard recommendations, and torque values.	ICA ref: Bell Standard Practices Manual BHT-ALL-SPM, Chapter 2	Supplemental ICA ref: Section 32-7
<b>A527.3 (g) Special tools</b> (g) A list of special tools needed.	ICA ref: N/A	Supplemental ICA ref: N/A

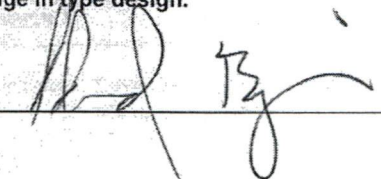
## MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

### BLOCK 3

Note: The statement in block 5 does not constitute an approval of the Airworthiness Limitations Section. Airworthiness Limitations differ from other maintenance tasks, in that they are mandatory, as a direct condition of the approval of the type design. They are therefore referenced directly in the approval document itself. However, they must also be included in the Supplemental Instructions for Continued Airworthiness.

<b>A527.4 AWL - Separate Section 1</b> The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under 527.571. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister."	ICA ref: Bell 429 Maintenance Manual, Chapter 4	Supplemental ICA ref: Chapter 4
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### BLOCK 4 – Applicant Statement of Compliance

The Supplemental ICA referenced above comprises the complete listing of supplemental ICA necessary to show compliance with the regulatory standard that supports this change in type design.	
Applicants Signature: 	Date: 03 December, 2012
Applicants Name: E. Burgoin, P.Eng, DAR 290M	

### BLOCK 5 – Minister's Statement of Acceptability

The design change is adequately supported by existing ICA and/or supplemental ICA, as identified above and is acceptable to the Minister.	
Reviewer's Name: _____ Phone # _____ Email: _____ Mail Routing Symbol: _____	
Signature: _____ Date: _____ NAPA Number _____	

## INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA 969.91

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### BELL 429 CABIN STEPS

#### Preface

These Instructions for Continued Airworthiness shall be included in the rotorcraft Maintenance Manual when Cabin Steps are installed in accordance with the following AERO Design Ltd. Document Control Lists:

- DCL969-1 (Fixed Cabin Step Installation)
- DCL969-2 (Quick Release Cabin Step Installation)

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 0  
Date: 30 November 2012

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AERO Design Ltd.  
Engineering Consultants

2013 – 39<sup>th</sup> Avenue N.E., Calgary, Alberta T2E 6R7  
Phone: (403) 250-8027  
Fax: (403) 250-8333  
E-Mail: [info@aerodesign.ca](mailto:info@aerodesign.ca)

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**RECORD OF REVISIONS**

Revision Number	Issue Date	Date Inserted	By
0	30 November 2012		Original Issue

**LIST OF EFFECTIVE PAGES**

List of Revisions

Revision 0 (Original Issue) 30 November 2012

## List of Effective Pages

<u>Description</u>	<u>Pages</u>	<u>Revision No.</u>
Cover	1	0
Revision Record/List of Effective Pages	2	0
Table of Contents	3	0
00-00-00	4-5	0
04-00-00	6	0
05-00-00	7-8	0
32-00-00	9-14	0



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## CHAPTER 0 – INTRODUCTION

### 0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of CAR 527.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Cabin Step Installations as described herein.

### 0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness  
LH - Left Hand  
RH - Right Hand

### 0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Cabin Step Installation. Requests for a copy may be made in writing to:

AERO Design Ltd.  
2013 39<sup>th</sup> Avenue N.E.  
Calgary, Alberta  
T2E 6R7  
Fax: 403-250-8333  
Email: [info@aerodesign.ca](mailto:info@aerodesign.ca)

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

### 0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

The Quick Release Cabin Step is installed on the existing mounting provisions for the Cargo Basket Installation. The Quick Release step cannot be installed simultaneously with the Cargo Basket or vice versa.

## 0-5 GENERAL DESCRIPTION

Installation of the Cargo Basket mounting provisions requires removal of the existing Bell cabin step assembly. This leaves the helicopter with no cabin access steps. The cabin step installations covered by these instructions use the cargo basket mounting provisions to provide for cabin access steps on both sides of the helicopter. The Fixed Cabin Step installation consists of a step assembly that is installed on the opposite side of the helicopter that the basket is installed on. The Quick Release Cabin Step installation is installed in place of the cargo basket when it is not required, and uses the cargo basket locking mechanism to retain it in the mounting provisions.

The step itself consists of an aluminum extrusion welded to machined aluminum brackets. Strips of non-slip tape are adhered to the top of the step.

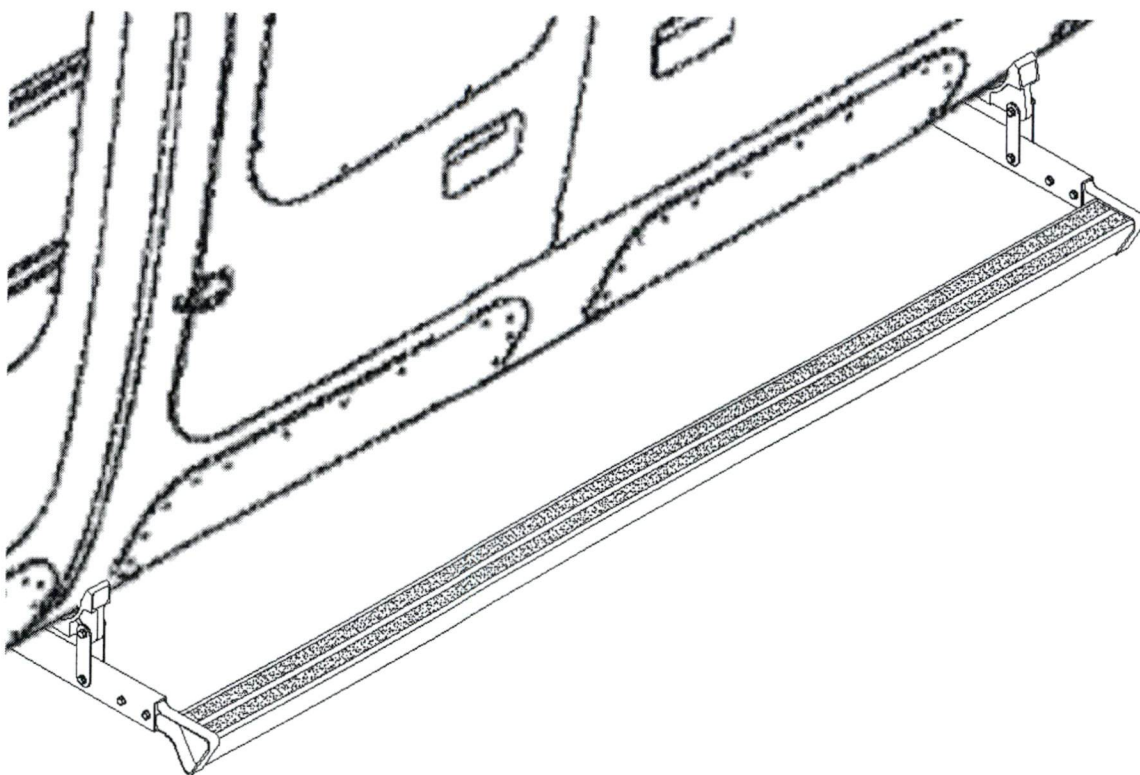


Figure 0-1 – Fixed Cabin Step

## CHAPTER 4 - AIRWORTHINESS LIMITATIONS

### *Transport Canada*

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

### *FAA*

The Airworthiness Limitations section is FAA approved and specifies inspections and other maintenance required under Secs. 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

### *EASA*

The Airworthiness Limitations section is approved and variations must also be approved.

No additional airworthiness limitations have been imposed due the installation of the Cabin Steps.



## CHAPTER 5 – INSPECTION REQUIREMENTS

### 5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of the Cabin Step Installations. Refer to ICA959.91 for inspection requirements for the Cargo Basket Mounting Provisions.

#### *Daily Inspection*

1. Inspection Area: Step
  - a) Inspect the step assembly for security and condition. Replace anti-slip tape if required, see Section 5-3.
  - b) Quick Release Step only: Visually inspect the attachment fittings for condition and security. Ensure quick release mechanism is completely extended, flush with the outboard surface of the beam. If pin does not completely extend, or spring tension is not sufficient to retain step, replace spring, refer to ICA959.91, section 25-10.

#### *200 Hour or Annual Inspection*

1. Inspection Area: Step
  - a) Perform daily inspection.
  - b) Visually inspect all mounting hardware for condition and security.
  - c) Visually inspect step and mounting brackets for corrosion, cracks or other damage. Repair damage found in accordance with section 5-2.

#### *Special Inspections*

1. Following a hard landing inspect the Fixed Cabin Step installation in accordance with the 200 hour or annual inspection listed above.

## 5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

If damage is found in the inspections above, repair in accordance with the instructions below.

### 1. Step Assembly – Fixed and Quick Release

Part	Type of Damage	Max. Allowable	Repair
Brackets	Corrosion	0.010" deep (0.25 mm deep)	Blend up to 0.010" (0.25 mm) deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 0.5" long (0.25 mm deep x 13 mm long)	Blend up to 0.010" (0.25 mm) deep with scotchbrite.
	Cracks/Dents	None	N/A
	Bent Lugs	None	N/A
Step Section	Corrosion	2" x 2" x 0.010" deep (51 mm x 51 mm x 0.25 mm deep)	Blend up to 0.010" (0.25 mm) deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 1" long (0.25 mm deep x 25 mm long)	Blend up to 0.010" (0.25 mm) deep with scotchbrite.
	Cracks / Dents	None	N/A
	Permanent Deflection of Step	0.25" (6 mm) max at middle of step	None
Welds	Cracks	0.25" (6 mm) max	See 2. below

### 2. Weld repair

Cracks up to 0.25" (6mm) in length may be repaired as follows:

- Clean area of paint or powder coat (as applicable).
- Grind away weld in area of crack.
- TIG weld in accordance with AMS2685C or equivalent, using ER4043 filler rod. Do not grind flush.
- Touch up paint in accordance with section 5-3

## 5-3 PROTECTIVE TREATMENT INFORMATION

### 1. Step Assembly

The Step Assembly is supplied powder coated white. If the powder coat is damaged, touch up in accordance with Bell Standard Procedures Manual, BHT-SPM-ALL, Chapter 4 and Chapter 5.

The tread areas have two strips of 3M Safety-Walk grip tape. If the grip tape is damaged replace with equivalent grip tape, or apply MIL-W-5044, Type 2, anti-slip paint to the top surface.

## CHAPTER 32 – LANDING GEAR

The Cabin Step installations may be applied to the right or left side of the helicopter, depending on the Mounting Provisions that are installed.

### 32-1 FIXED CABIN STEP REMOVAL

Configuration: 96901-01-01 (right), 96901-01-02 (left)

Refer to Figure 0-1 and 32-1.

1. Remove two (2) AN4-14A bolts, NAS1149F0463P washers, MS21044N4 nuts securing step bracket into forward and aft mounting beams. Slide Step Assembly 96910-01 out of mounting beams.

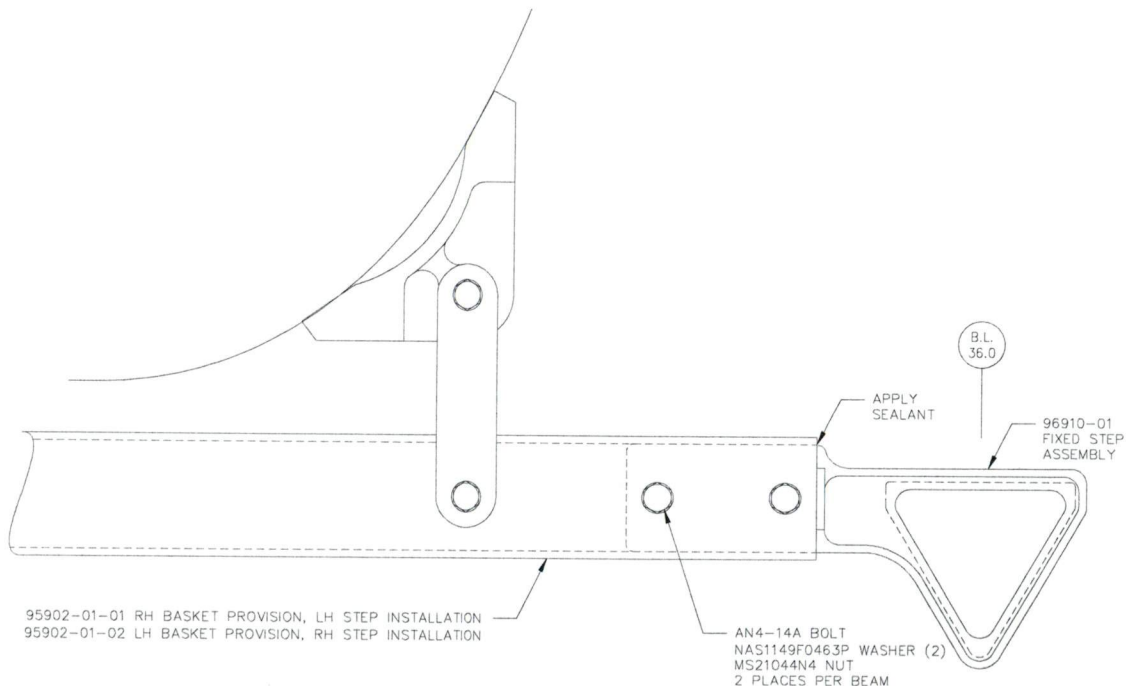


Figure 32-1 – Fixed Step Installation

### 32-2 FIXED CABIN STEP INSTALLATION

Configuration: 96901-01-01 (right), 96901-01-02 (left)

Refer to figure 0-1 and 32-1.

1. Attachment Provisions 95902-01-01 (right side basket) or 95902-01-02 (left side basket) must be installed. Refer to ICA959.91, section 25.
2. Clean inside of forward and aft mounting beam as required to remove any residual sealant or powder coat. A file or 80 grit emery paper may be used.
3. Apply sealant (C-251) to the faying surfaces of the mounting beam and Step Assembly 96910-01.
4. Insert brackets on Step Assembly 96910-01 into ends of forward and aft mounting beams. Slide until against stop on step bracket.



5. Insert two (2) AN4-14A Bolts, NAS1149F0463P Washers (2), and MS21044N4 Nuts into holes in forward mounting beam, through step bracket. Repeat for aft mounting beam.
6. Torque AN4 Bolts to 30-40 in-lbs (4-5 N-m).
7. Apply bead of sealant (C-251) at interface of step bracket and mounting beam.

### 32-3 QUICK RELEASE CABIN STEP REMOVAL

Configuration: 96902-01-01 (right), 96902-01-02 (left)

Alternate Configuration: 96902-11-01 (right), 96902-11-02 (left)

Refer to Figure 32-2 and 32-3.

1. Pull lever at bottom end of aft beam inboard to retract retaining pin and lift step until lower attachment fitting is free of keyway. Keep upper attachment in slot in beam.
2. Lift step until upper attachment is out of keyway on aft beam. Rotate aft end outboard and slide step forward until forward attachments are free from keyways in forward beam.

### 32-4 QUICK RELEASE CABIN STEP INSTALLATION

Configuration: 96902-01-01 (right), 96902-01-02 (left)

Alternate Configuration: 96902-11-01 (right), 96902-11-02 (left)

Refer to Figure 32-2 and 32-3.

1. Slide forward attachments of Quick Release Step Assembly 96911-01 (or 80010-7475, alternate configuration) into forward mounting beam.

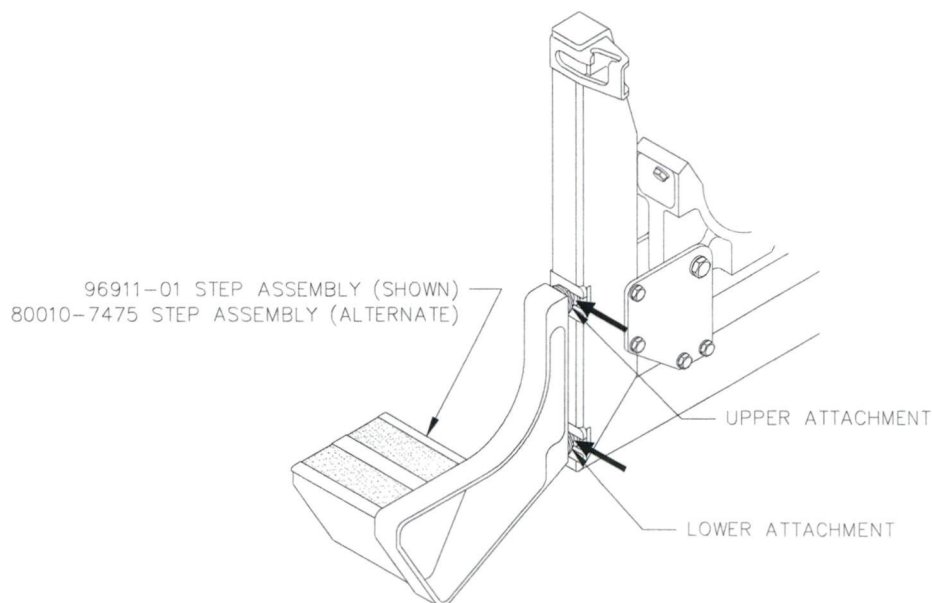


Figure 32-2 – Quick Release Step Forward Attachment



2. At aft end, rotate step inboard and pull step aft to aft mounting beam. Align attachment fittings on step with keyways, push step in and down to engage attachments into keyways on aft beam. Pin at lower attachment will spring into place with a snap.

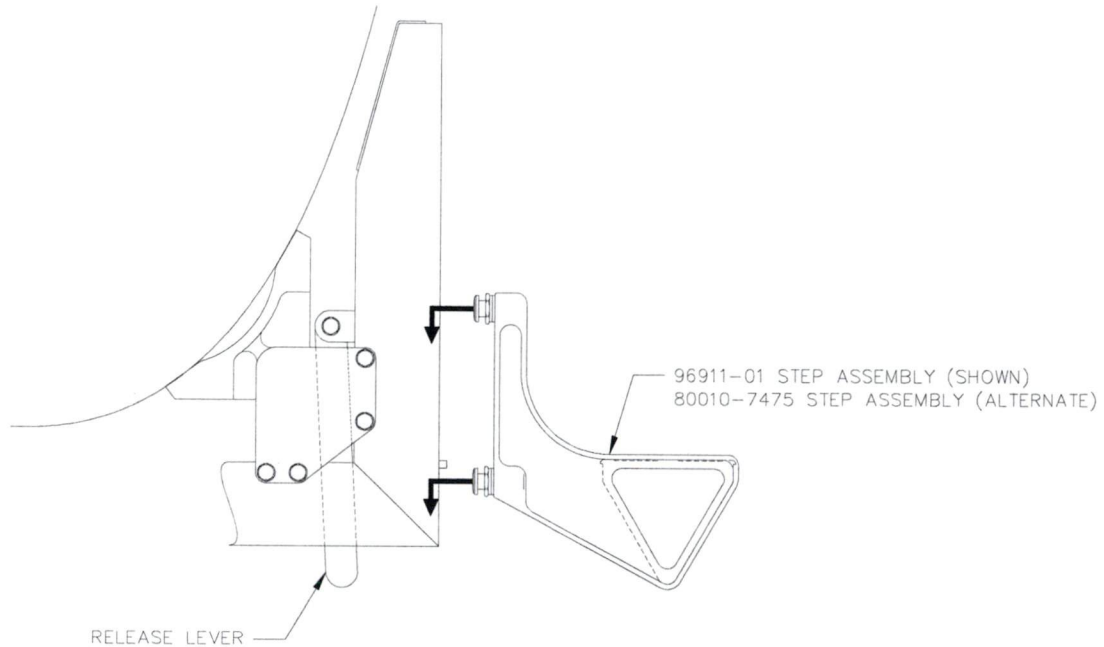


Figure 32-3 – Quick Release Step Aft Attachment

3. Check that step is secure by pulling up on aft end.

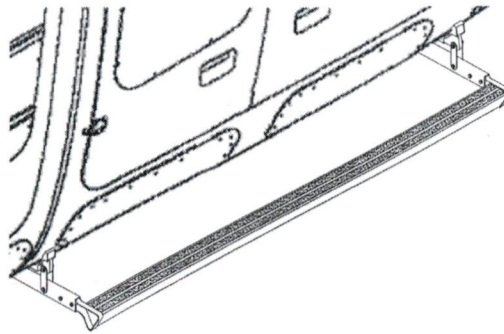
**32-5 BILL OF MATERIALS**

Figure 32-4 – Fixed Cabin Step Installation (Left shown)

**FIXED CABIN STEP INSTALLATION**

Qty.	Part Number	Description
	<b>96901-01-01</b>	<b>RH Fixed Cabin Step Installation</b>
	<b>96901-01-02</b>	<b>LH Fixed Cabin Step Installation</b>
. 1	95902-01-01	RH Attachment Provisions Installation
. 1	95902-01-02	LH Attachment Provisions Installation
. 1	96910-01	Fixed Step Assembly
. 4	AN4-42A	Bolt
. 8	AN960-416	Washer
. 4	MS21044N4	Nut

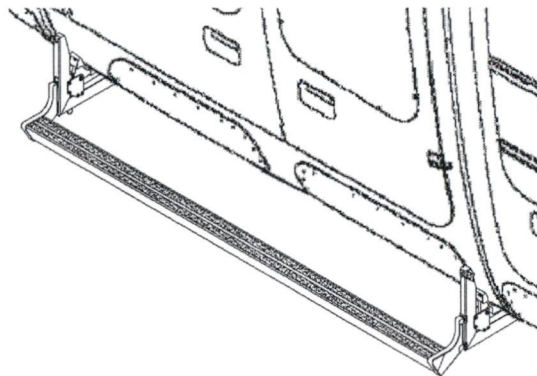


Figure 32-5 – Quick Release Step Installation (Right shown)

**QUICK RELEASE CABIN STEP INSTALLATION**

Qty.	Part Number	Description
	<b>96902-01-01</b>	<b>RH Fixed Cabin Step Installation</b>
	<b>96902-01-02</b>	<b>LH Fixed Cabin Step Installation</b>
. 1	95902-01-01	RH Attachment Provisions Installation
. 1	95902-01-02	LH Attachment Provisions Installation
. 1	96911-01	Quick Release Step Assembly
	<b>96902-11-01</b>	<b>RH Fixed Cabin Step Installation (Alternate)</b>
	<b>96902-11-02</b>	<b>LH Fixed Cabin Step Installation (Alternate)</b>
. 1	95902-01-01	RH Attachment Provisions Installation
. 1	95902-01-02	LH Attachment Provisions Installation
. 1	80010-7475	Quick Release Step Assembly

## 32-6 WEIGHT AND BALANCE

Standard						
P/N	Description	Weight	Longitudinal		Lateral	
		lb	arm in	moment in-lb	arm in	moment in-lb
Fixed Step						
95902-01-02	LH Attachment Provisions Installation	31.2	201.47	6286.01	-2.91	-90.85
95910-01	Fixed Cabin Step Assembly	5.8	201.25	1167.25	35.70	207.06
95901-01-01	RH Fixed Cabin Step Installation (total)	37.0	201.44	7453.26	3.14	116.21
95902-01-01	RH Attachment Provisions Installation	31.2	201.47	6286.01	2.91	90.85
95910-01	Fixed Cabin Step Assembly	5.8	201.25	1167.25	-35.70	-207.06
95901-01-02	LH Fixed Cabin Step Installation (total)	37.0	201.44	7453.26	-3.14	-116.21
Quick Release Step						
95902-01-01	RH Attachment Provisions Installation	31.2	201.47	6286.01	2.91	90.85
95911-01	Quick Release Cabin Step Assembly	6.0	201.25	1207.50	35.76	214.56
95902-01-01	RH Quick Release Cabin Step Installation (total)	37.2	201.44	7493.51	8.21	305.41
95902-01-02	LH Attachment Provisions Installation	31.2	201.47	6286.01	-2.91	-90.85
95911-01	Quick Release Cabin Step Assembly	6.0	201.25	1207.50	-35.76	-214.56
95902-01-02	LH Quick Release Cabin Step Installation (total)	37.2	201.44	7493.51	-8.21	-305.41
Quick Release Step (Alternate)						
95902-01-01	RH Attachment Provisions Installation	31.2	201.47	6286.01	2.91	90.85
80010-7475	Quick Release Cabin Step Assembly	8.2	201.25	1650.25	33.67	276.09
95902-11-01	RH Quick Release Cabin Step Installation (Alternate) (total)	39.4	201.43	7936.26	9.31	366.95
95902-01-02	LH Attachment Provisions Installation	31.2	201.47	6286.01	-2.91	-90.85
80010-7475	Quick Release Cabin Step Assembly	8.2	201.25	1650.25	-33.67	-276.09
95902-11-02	LH Quick Release Cabin Step Installation (Alternate)(total)	39.4	201.43	7936.26	-9.31	-366.95

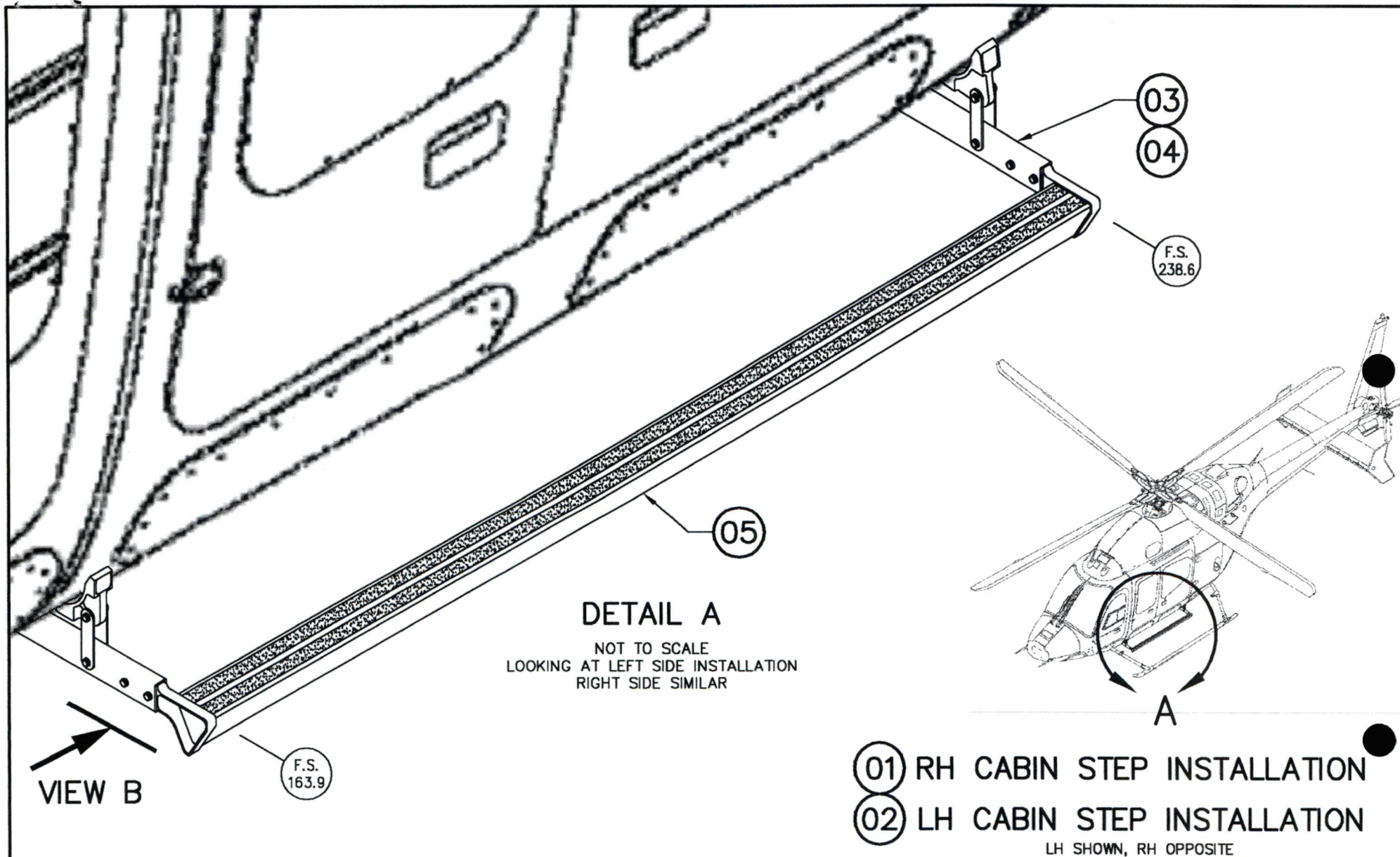


Metric						
P/N	Description	Weight	Longitudinal		Lateral	
		kg	arm mm	moment mm-kg	arm mm	moment mm-kg
Fixed Step						
95902-01-02	LH Attachment Provisions Installation	14.15	5117.46	72422.75	-73.96	-1046.73
95910-01	Fixed Cabin Step Assembly	2.63	5111.75	13448.19	906.78	2385.59
95901-01-01	RH Fixed Cabin Step Installation (total)	16.78	5116.56	85870.95	79.78	1338.86
95902-01-01	RH Attachment Provisions Installation	14.15	5117.46	72422.75	73.96	1046.73
95910-01	Fixed Cabin Step Assembly	2.63	5111.75	13448.19	-906.78	-2385.59
95901-01-02	LH Fixed Cabin Step Installation (total)	16.78	5116.56	85870.95	-79.78	-1338.86
Quick Release Step						
95902-01-01	RH Attachment Provisions Installation	14.15	5117.46	72422.75	73.96	1046.73
95911-01	Quick Release Cabin Step Assembly	2.72	5111.75	13911.92	908.30	2472.00
95902-01-01	RH Quick Release Cabin Step Installation (total)	16.87	5116.54	86334.68	208.53	3518.73
95902-01-02	LH Attachment Provisions Installation	14.15	5117.46	72422.75	-73.96	-1046.73
95911-01	Quick Release Cabin Step Assembly	2.72	5111.75	13911.92	-908.30	-2472.00
95902-01-02	LH Quick Release Cabin Step Installation (total)	16.87	5116.54	86334.68	-208.53	-3518.73
Quick Release Step (Alternate)						
95902-01-01	RH Attachment Provisions Installation	14.15	5117.46	72422.75	73.96	1046.73
80010-7475	Quick Release Cabin Step Assembly	3.72	5111.75	19012.96	855.22	3180.95
95902-11-01	RH Quick Release Cabin Step Installation (Alternate) (total)	17.87	5116.27	91435.71	236.56	4227.68
95902-01-02	LH Attachment Provisions Installation	14.15	5117.46	72422.75	-73.96	-1046.73
80010-7475	Quick Release Cabin Step Assembly	3.72	5111.75	19012.96	-855.22	-3180.95
95902-11-02	LH Quick Release Cabin Step Installation (Alternate)(total)	17.87	5116.27	91435.71	-236.56	-4227.68

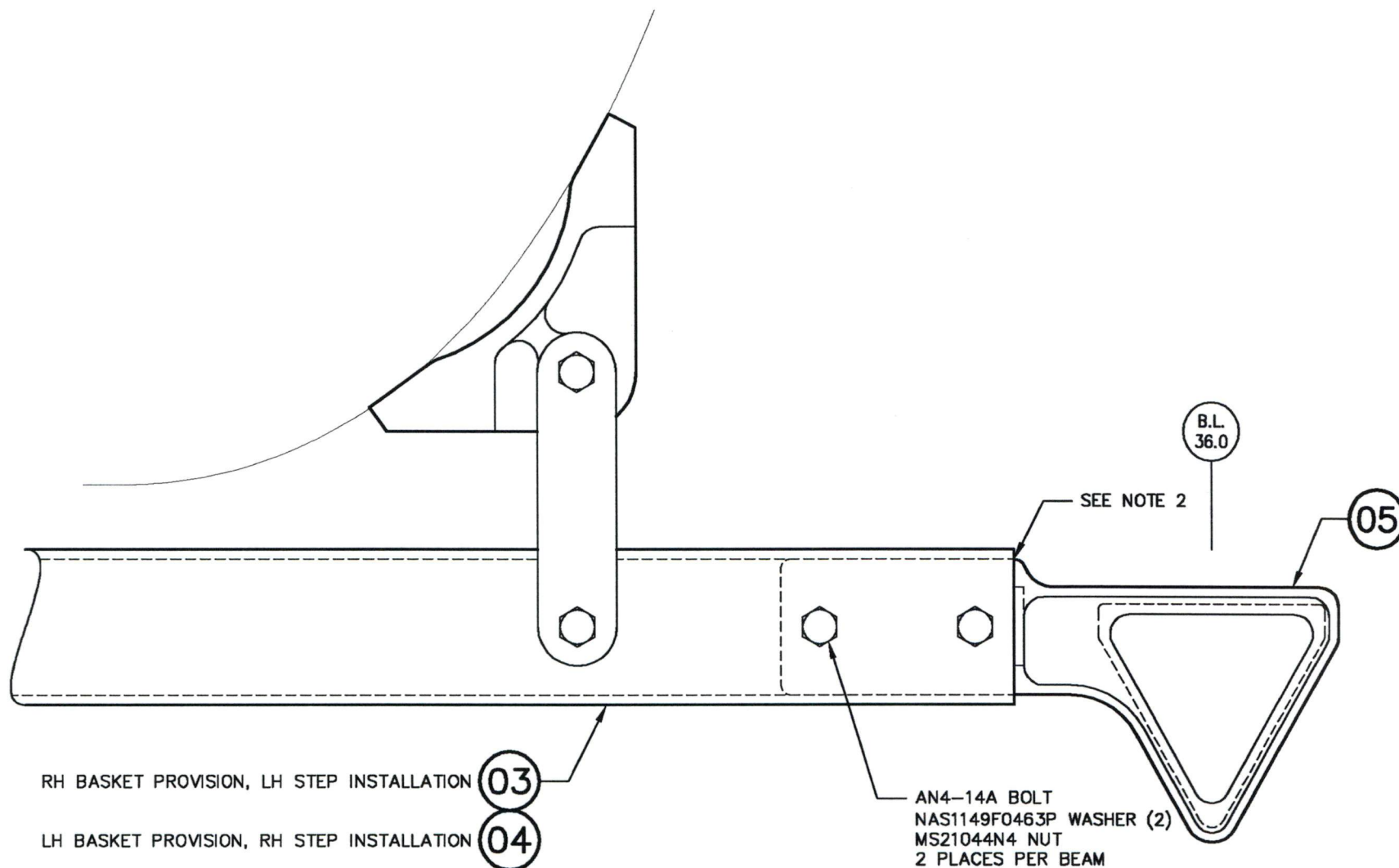
### 32-7 STRUCTURAL FASTENER DATA

Refer to Standard Practices Manual, BHT-ALL-SPM, for torque values not listed in this ICA.





APPROVALS		DATE		<b>AERO DESIGN LTD.</b> CONSULTING ENGINEERS, TRANSPORT CANADA APPROVALS, DAR 290M 2013 - 30TH AVENUE N.E., CALGARY, ALBERTA, CANADA, T2E 6R7 tel: (403) 250-8027 fax: (403) 250-8333 www.aerodesign.ca			
DRAWN: JEFF CLARKE		27 NOV 2012					
CHECKED: E. BURGAIN		04 DEC 2012					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: DECIMALS ANGLES X.XXX ±0.010 ±1/2" X.XX ±0.03 X.X ±0.1				BELL 429 CABIN STEPS FIXED CABIN STEP INSTALLATION			
NOT TO SCALE		DWG. SIZE		DWG. NO.		REV.	
SHEET 1 OF 3		A4		96901		0	



## DETAIL B

SCALE 1 : 2  
LOOKING AFT AT FORWARD ATTACHMENT  
AFT ATTACHMENT SIMILAR

APPROVALS		DATE		<b>AERO DESIGN LTD.</b> CONSULTING ENGINEERS, TRANSPORT CANADA APPROVALS, DAR 290M 2013 - 30TH AVENUE N.E., CALGARY, ALBERTA, CANADA, T2E 6R7 tel: (403) 250-8027 fax: (403) 250-8333 www.aerodesign.ca			
DRAWN: JEFF CLARKE		27 NOV 2012					
CHECKED: E. BURGOIN		04 DEC 2012					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON:  DECIMALS                      ANGLES X.XXX ±0.010                      ±1/2° X.XX ±0.03 X.X ±0.1				BELL 429 CABIN STEPS FIXED CABIN STEP INSTALLATION			
				SCALE 1 : 2		DWG. SIZE	DWG. NO.
SHEET 2 OF 3				A4		96901	0



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REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	INITIAL ISSUE	*	*

#### NOTES

1. INSTALLATION OF MOUNTING PROVISIONS IN ACCORDANCE WITH DRAWING 95902 IS REQUIRED PRIOR TO THIS INSTALLATION.
2. APPLY SEALANT C-251 TO FAYING SURFACES OF STEP AND TUBE.
3. TORQUE AN4 BOLTS TO 30-40 IN-LBS (4-5 N-m).
4. REFER TO INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA969.91 FOR MAINTENANCE INFORMATION.
5. WEIGHT AND BALANCE GIVEN FOR RIGHT SIDE STEP INSTALLATION, LATERAL ARMS FOR LEFT SIDE ARE OPPOSITE.

#### WEIGHT AND BALANCE – METRIC

ITEM	DESCRIPTION	WEIGHT (kg)	LONGITUDINAL		LATERAL (NOTE 5)	
			ARM (mm)	MOMENT (mm-kg)	ARM (mm)	MOMENT (mm-kg)
03/04	PROVISIONS INSTALLATION	14.15	5117.5	72423	-74.0	-1047
05	CABIN STEP ASSEMBLY	2.63	5111.8	13448	906.8	2386
01/02	FIXED CABIN STEP INSTALLATION	16.78	5116.6	85871	79.8	1339

#### WEIGHT AND BALANCE – STANDARD

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL		LATERAL (NOTE 5)	
			ARM (IN)	MOMENT (LB-IN)	ARM (IN)	MOMENT (LB-IN)
03/04	PROVISIONS INSTALLATION	31.2	201.47	6286.01	-2.91	-90.85
05	CABIN STEP ASSEMBLY	5.8	201.25	1167.25	35.7	207.06
01/02	FIXED CABIN STEP INSTALLATION	37.0	201.44	7453.26	3.14	116.21

A/R	A/R	C-251	SEALANT (BELL)
4	4	MS21044N4	NUT
8	8	NAS1149F0463P	WASHER
4	4	AN4-14A	BOLT
1	1	96910-01	05 CABIN STEP ASSEMBLY
	1	95902-01-02	04 LH MOUNTING PROVISIONS INSTALLATION
1		95902-01-01	03 RH MOUNTING PROVISIONS INSTALLATION
		96901-01-02	02 LH FIXED CABIN STEP INSTALLATION
		96901-01-01	01 RH FIXED CABIN STEP INSTALLATION
02	01	PART NO.	ITEM DESCRIPTION
QTY	QTY	LIST OF MATERIALS	

#### APPROVALS

#### DATE

DRAWN: JEFF CLARKE 27 NOV 2012

CHECKED: E. BURGOIN 04 DEC 2012

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES.  
TOLERANCES ON:  
DECIMALS ANGLES  
X.XXX ±0.010 ±1/2°  
X.XX ±0.03  
X.X ±0.1

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tel: (403) 260-8087 fax: (403) 260-8333 www.aerodesign.ca

#### BELL 429 CABIN STEPS FIXED CABIN STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 3 OF 3	A4	96901	0

03  
04

F.S.  
238.6

05

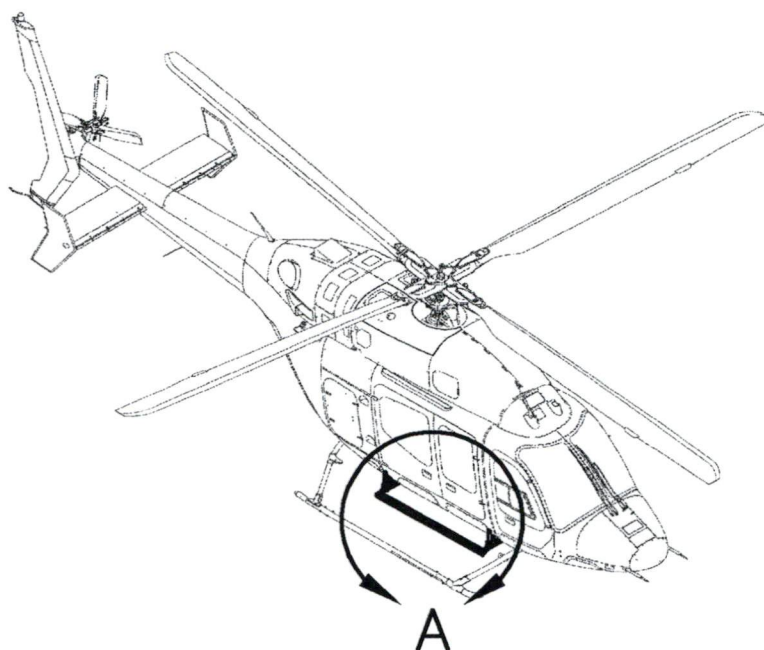
## DETAIL A

NOT TO SCALE  
LOOKING AT RIGHT SIDE INSTALLATION  
LEFT SIDE SIMILAR

F.S.  
163.9

B.L.  
36.0

CENTRE OF STEP



- 01 RH QUICK RELEASE CABIN STEP INST'N  
02 LH QUICK RELEASE CABIN STEP INST'N  
RH SHOWN, LH OPPOSITE

APPROVALS		DATE		<b>AERO DESIGN LTD.</b> CONSULTING ENGINEERS, TRANSPORT CANADA APPROVALS, DAR 290M 2013 - 39TH AVENUE N.E., CALGARY, ALBERTA, CANADA, T2E 6R7 tel: (403) 260-8027 fax: (403) 260-8333 www.aerodesign.ca					
DRAWN: JEFF CLARKE		30 NOV 2012							
CHECKED: E. BURGOIN		04 DEC 2012							
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: DECIMALS ANGLES X.XXX ±0.010 ±1/2" X.XX ±0.03 X.X ±0.1				BELL 429 CABIN STEPS QUICK RELEASE CABIN STEP INSTALLATION					
NOT TO SCALE				DWG. SIZE		DWG. NO.		REV.	
SHEET 1 OF 4				A4		96902		0	



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REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	INITIAL ISSUE	*	*

#### NOTES

1. INSTALLATION OF MOUNTING PROVISIONS IN ACCORDANCE WITH DRAWING 95902 IS REQUIRED PRIOR TO THIS INSTALLATION.
2. REFER TO FLIGHT MANUAL SUPPLEMENT FMS969.90 FOR FLIGHT LIMITATIONS AND INFORMATION.
3. REFER TO INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA969.91 FOR MAINTENANCE INFORMATION.
4. WEIGHT AND BALANCE GIVEN FOR RIGHT SIDE, LATERAL ARMS FOR LEFT SIDE ARE NEGATIVE.
5. CONFIGURATION (ITEM) 11 AND 12 ARE ALTERNATES TO CONFIGURATION (ITEM) 01 AND 02 RESPECTIVELY.

#### WEIGHT AND BALANCE – METRIC

ITEM	DESCRIPTION	WEIGHT (kg)	LONGITUDINAL		LATERAL (NOTE 4)	
			ARM (mm)	MOMENT (mm–kg)	ARM (mm)	MOMENT (mm–kg)
03/04	PROVISIONS INSTALLATION	14.15	5117.5	72423	74.0	1047
05	CABIN STEP ASSEMBLY	2.72	5111.8	13912	908.3	2472
01/02	FIXED CABIN STEP INSTALLATION	16.87	5116.5	86335	208.5	3519

#### WEIGHT AND BALANCE – STANDARD

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL		LATERAL (NOTE 4)	
			ARM (IN)	MOMENT (LB–IN)	ARM (IN)	MOMENT (LB–IN)
03/04	PROVISIONS INSTALLATION	31.2	201.47	6286.01	2.91	90.85
05	CABIN STEP ASSEMBLY	6.0	201.25	1207.50	35.76	214.56
01/02	FIXED CABIN STEP INSTALLATION	37.2	201.44	7493.51	8.21	305.41

1	1	96911–01	05	QUICK RELEASE STEP ASSEMBLY
1		95902–01–02	04	LH MOUNTING PROVISIONS INSTALLATION
	1	95902–01–01	03	RH MOUNTING PROVISIONS INSTALLATION
		96902–01–02	02	LH QUICK RELEASE CABIN STEP INSTALLATION
		96902–01–01	01	RH QUICK RELEASE CABIN STEP INSTALLATION
02	01	PART NO.	ITEM	DESCRIPTION
QTY	QTY	LIST OF MATERIALS		

APPROVALS	DATE
DRAWN: JEFF CLARKE	30 NOV 2012
CHECKED: E. BURGOIN	04 DEC 2012

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES.  
TOLERANCES ON:  
DECIMALS ANGLES  
X.XXX  $\pm 0.010$   $\pm 1/2^\circ$   
X.XX  $\pm 0.03$   
X.X  $\pm 0.1$

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tel: (403) 250-8027 fax: (403) 250-8333 www.aerodesign.ca

#### BELL 429 CABIN STEPS QUICK RELEASE CABIN STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.	
SHEET 2 OF 4	A4	96902	0	

03  
04

F.S.  
238.6

13

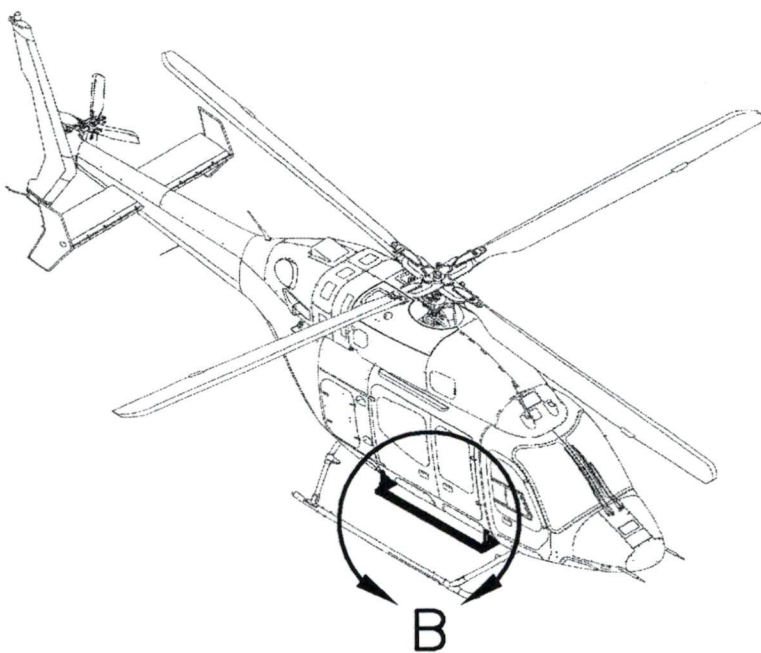
# DETAIL B

NOT TO SCALE  
LOOKING AT RIGHT SIDE INSTALLATION  
LEFT SIDE SIMILAR

F.S.  
163.9

B.L.  
33.6

CENTRE OF STEP



- 11 RH QUICK RELEASE CABIN STEP INST'N
  - 12 LH QUICK RELEASE CABIN STEP INST'N
- RH SHOWN, LH OPPOSITE

APPROVALS	DATE
DRAWN: JEFF CLARKE	30 NOV 2012
CHECKED: E. BURGOIN	04 DEC 2012

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES.  
TOLERANCES ON:  
DECIMALS ANGLES  
X.XXX  $\pm 0.010$   $\pm 1/2^\circ$   
X.XX  $\pm 0.03$   
X.X  $\pm 0.1$

AERO DESIGN LTD.			
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BELL 429 CABIN STEPS QUICK RELEASE CABIN STEP INSTALLATION			
NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 3 OF 4	A4	96902	0



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REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	INITIAL ISSUE	*	*

#### NOTES

1. INSTALLATION OF MOUNTING PROVISIONS IN ACCORDANCE WITH DRAWING 95902 IS REQUIRED PRIOR TO THIS INSTALLATION.
2. REFER TO FLIGHT MANUAL SUPPLEMENT FMS969.90 FOR FLIGHT LIMITATIONS AND INFORMATION.
3. REFER TO INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA969.91 FOR MAINTENANCE INFORMATION.
4. WEIGHT AND BALANCE GIVEN FOR RIGHT SIDE, LATERAL ARMS FOR LEFT SIDE ARE NEGATIVE.
5. CONFIGURATION (ITEM) 11 AND 12 ARE ALTERNATES TO CONFIGURATION (ITEM) 01 AND 02 RESPECTIVELY.

#### WEIGHT AND BALANCE – METRIC

ITEM	DESCRIPTION	WEIGHT (kg)	LONGITUDINAL		LATERAL (NOTE 4)	
			ARM (mm)	MOMENT (mm–kg)	ARM (mm)	MOMENT (mm–kg)
03/04	PROVISIONS INSTALLATION	14.15	5117.5	72423	74.0	1047
13	CABIN STEP ASSEMBLY	3.72	5111.8	19013	855.2	3181
11/12	FIXED CABIN STEP INSTALLATION	17.87	5116.3	91436	236.6	4228

#### WEIGHT AND BALANCE – STANDARD

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL		LATERAL (NOTE 4)	
			ARM (IN)	MOMENT (LB–IN)	ARM (IN)	MOMENT (LB–IN)
03/04	PROVISIONS INSTALLATION	31.2	201.47	6286.01	2.91	90.85
13	CABIN STEP ASSEMBLY	8.2	201.25	1650.25	33.67	276.09
11/12	FIXED CABIN STEP INSTALLATION	39.4	201.43	7936.26	9.31	366.95

1		95902-01-02	04	LH MOUNTING PROVISIONS INSTALLATION
	1	95902-01-01	03	RH MOUNTING PROVISIONS INSTALLATION
1	1	80010-7475	13	QUICK RELEASE STEP ASSEMBLY
		96902-11-02	12	LH QUICK RELEASE CABIN STEP INST'N – ALTERNATE
		96902-11-01	11	RH QUICK RELEASE CABIN STEP INST'N – ALTERNATE
12	11	PART NO.	ITEM	DESCRIPTION
QTY	QTY	LIST OF MATERIALS		

APPROVALS	DATE
DRAWN: JEFF CLARKE	30 NOV 2012
CHECKED: E. BURGOIN	04 DEC 2012

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES.  
TOLERANCES ON:  
DECIMALS ANGLES  
X.XXX ±0.010 ±1/2°  
X.XX ±0.03  
X.X ±0.1

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tel: (403) 250-8087 fax: (403) 250-8333 www.aerodesign.ca

#### BELL 429 CABIN STEPS QUICK RELEASE CABIN STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 4 OF 4	A4	96902	0

**AERO DESIGN LTD.**

2013 – 39 Avenue N.E., Calgary, Alberta, T2E 6R7

Tel: 403-250-8027

Fax: 403-250-8333

[www.aerodesign.ca](http://www.aerodesign.ca)

03 December 2012

Transport Canada  
Aircraft Certification Division  
11<sup>th</sup> Floor, Canada Place  
9700 Jasper Avenue  
Edmonton, Alberta  
T5J 4E6

Attn: Jack Staal

Your File : C-12-1075

Our File : 969

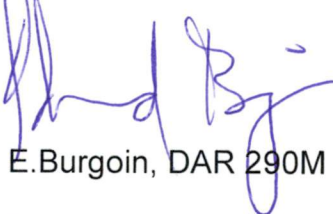
Re: Bell 429 Cabin Steps

Jack,

Please extend my delegation to include the following paragraphs of CAR 527 as indicated on compliance program CP969 revision 0 (uploaded to NAPA):

527.251 - Vibration

Regards,



E. Burgoin, DAR 290M

Encl.



# AIRWORTHINESS REQUIREMENTS COMPLIANCE PROGRAM

APPLICANT: AERO Design Ltd.  
2013 39<sup>th</sup> Avenue NE  
Calgary, Alberta, T2E 6R7

DATE: 03 December 2012  
REV. No. 0

CORRESPONDANCE TO:  
(If other than applicant)

MAKE: Bell  
MODEL: 429

REGISTRATION: All Applicable  
SERIAL No.: All Applicable

NATURE OF WORK: Installation of Quick Release Cabin Step, Fixed Cabin Step

MODEL CERTIFICATION BASIS: CAR 527, Change 527-9  
MODIFICATION CERTIFICATION BASIS: CAR 527, Change 527-9

Airworthiness Requirement	Subject for Compliance or Documentary Proof	Form of Substantiation	DOT	DAR	Comments
<b>Subpart B – Flight</b>					
527.29	Empty Weight and Corresponding C of G	Data specified on inst'n drawing		X	
527.251	Vibration	Statement in Report		**	
<b>Subpart C – Strength Requirements</b>					
527.301	Loads – Air Drag/Lift Loads	Analysis		X	
527.301	Loads – Inertia Loads	Compliance with 527.337 and 527.561		X	
527.303	Factor of Safety	Analysis		X	
527.305	Strength and Deformation	Analysis and Test iaw AC 43.13-1B		X	
527.307	Proof of Structure	Analysis and Test iaw AC 43.13-1B		X	
527.337	Limit Maneuvering Load Factor – Positive	Analysis and Test iaw AC 43.13-1B		X	Step not intended for use in flight, no personnel loads, same as original configuration
527.561	Emergency Landing Conditions	N/A		X	Step is located below cabin
<b>Subpart D – Design and Construction</b>					
527.601	Design	Specification on Drawings		X	Design is conventional.
527.603	Materials	Specification on Drawings		X	Materials used are specified in AR-MMPDS-01.
527.605	Fabrication Methods	Specification on Drawings		X	Design is conventional.
527.609	Protection of Structure	Specification on Drawings		X	
527.611	Inspection Provisions	Specification on Drawings		X	Design is easy to inspect.
527.613	Material Strength Properties and Design Values	Values used as per AR-MMPDS-01		X	
527.625	Fitting Factor	Analysis		X	
527.1387	Position Light System Dihedral Angles	N/A			No change from Type Approval.
527.1401	Anticollision Light System	N/A			No change from Type Approval.

AIRWORTHINESS REQUIREMENTS  
COMPLIANCE PROGRAM

Airworthiness Requirement	Subject for Compliance or Documentary Proof	Form of Substantiation	DOT	DAR	Comments
527.1529	Instructions for Continued Airworthiness	ICA Provided	X		
527.1581	Rotorcraft Flight Manual	FMS Provided	X		Installation/Removal instructions provided

Items marked \*\* indicate chapters where extension of delegation is requested.

**Title:** Cabin Step Installations  
**Approval:** STC  
**Manufacture:** Mfd by Aero Design (amend Approved Product List)  
**Customer:**  
**Type and Model:** Bell 429

**Definition Of Change:****Description:**

Installation of the Cargo Basket mounting provisions requires removal of the existing Bell cabin step assemblies on both sides. This leaves the helicopter with no cabin access steps. The cabin step installations covered by these instructions use the cargo basket mounting provisions to provide for cabin access steps on both sides of the helicopter. The Fixed Cabin Step installation consists of a step assembly that is installed on the opposite side of the helicopter that the basket is installed on. The Quick Release Cabin Step installation is installed in place of the cargo basket when it is not required, and uses the cargo basket locking mechanism to retain it in the mounting provisions.

The step itself consists of an aluminum extrusion welded to machined aluminum brackets. Strips of non-slip tape are adhered to the top of the step.

**Primary Changes to the Aeronautical Product:**

Installation of fixed cabin step, installation of quick release cabin step

**Secondary Changes to the Aeronautical Product (Required as consequence of primary changes):**

None

**Other Relevant Modifications to the Aeronautical Product (Which impact on this change):**

Quick Release Cargo Basket Installation, STC SH12-58



## CHANGED PRODUCT RULE (CPR) DECISION RECORD

NAPA No.:

**Step 1:** Identify the proposed change to the aeronautical product.

The changes are as previously described.

(Section 4.1 of AC 500-016)

**Step 2:** Is the change substantial?☐ Yes A new type certificate is required. CPR Decision Process is **Closed**.

(Section 4.2 of AC 500-016)

☒ No Proceed to Step 3**Step 3:** Will the latest standards be used?☐ Yes Certification basis to use latest standards. CPR Decision Process is **Closed**.

(Section 4.3 of AC 500-016)

☒ No Proceed to Step 4.**Step 4:** Is the proposed change significant?☐ Yes Proceed to Decision.

(Section 4.4 of AC 500-016)

☒ No Compliance may be shown to earlier standards. Certification basis to be defined and documented as indicated (below). CPR Decision Process is **Closed**.**Decision:** Will the latest standards be used?☐ Yes Certification basis to use latest standards. CPR Decision Process is **Closed**.☐ No Proceed to Step 5, addressing each area separately (see below).**Identification of Affected Areas:**The area(s) affected by the proposed change have been detailed in Compliance Program:  
CP969**Note:** A delegate may develop a proposal for the Yes/No decision of Step 6, however, TCCA will make the final determination.**Area:****Step 5:** Is this area affected by the proposed change?☐ Yes Proceed to Step 6.

(Section 6.1 of AC 500-016)

☐ No Compliance with the latest standards is not required. Compliance may be shown to earlier standards. Certification basis defined or documented as indicated below.**Step 6:** Are the latest standards practical and do they contribute materially to the level of safety?☐ Yes Certification basis to be established using latest standards.

(Section 6.2 of AC 500-016)

☒ No Compliance with the latest standards is not required. Compliance may be shown to earlier standards. Certification Basis defined or documented as indicated in below.☐ Continuation Sheet(s) Attached**Note:** Several standards may apply to each area and the assessment may differ from standard to standard. Indicate Yes if compliance with any latest standard(s) will be required. Indicate No only if no later standards are to be applied.**Certification Basis**The certification basis is as follows or as detailed in the listed document(s):  
Bell 429, TCDS H-107:  
CAR 527, Change 527-9

Under the delegated authority, I have examined the change in type design listed above according to established procedures and hereby determine, to the best of my knowledge and belief, that it is. (check one)

- ☐ substantial, pursuant to subsection 511.14 or 513.14 of the CARs
- ☐ significant, pursuant to subsection 511.13(3) or 513.07(3) of the CARs
- ☒ not significant, pursuant to subsection 511.13(3) or 513.07(3) of the CARs

E. Burgoin, P. Eng., DAR 290M

03 December 2012

Date